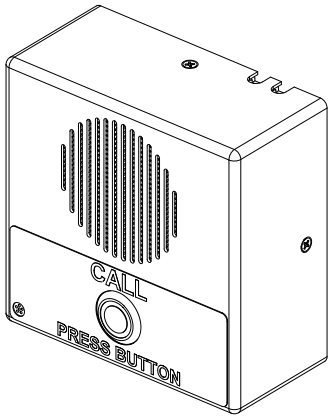
CyberData
The IP Endpoint Company



Singlewire-enabled VoIP Indoor Intercom Operations Guide

Part #011305, RAL 9003, Signal White Color

Document Part #930943A
for Firmware Version *10.4.0*

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VoIP Indoor Intercom Operations Guide 930943A
Part # 011305

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Technical Support

The fastest way to get technical support for your VoIP product is to submit a VoIP Technical Support form at the following website:
http://www.cyberdata.net/support/contactsupportvoip.php

Phone: (831) 373-2601, Ext. 333
Email: support@cyberdata.net
Fax: (831) 373-4193
Company and product information is at **www.cyberdata.net**.

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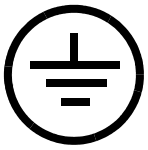
Pictorial Alert Icons

GENERAL ALERT	**General Alert** This pictoral alert indicates a potentially hazardous situation. This alert will be followed by a hazard level heading and more specific information about the hazard.
	**Ground** This pictoral alert indicates the Earth grounding connection point.

Hazard Levels

Danger: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This is limited to the most extreme situations.

Warning: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Caution: Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also alert users against unsafe practices.

Notice: Indicates a statement of company policy (that is, a safety policy or protection of property).

The safety guidelines for the equipment in this manual do not purport to address all the safety issues of the equipment. It is the responsibility of the user to establish appropriate safety, ergonomic, and health practices and determine the applicability of regulatory limitations prior to use. Potential safety hazards are identified in this manual through the use of words Danger, Warning, and Caution, the specific hazard type, and pictorial alert icons.

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Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
13. Prior to installation, consult local building and electrical code requirements.

Warning

Electrical Hazard: This product should be installed by a licensed electrician according to all local electrical and building codes.

Warning

Electrical Hazard: To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.

Warning

The PoE connector is intended for intra-building connections only and does not route to the outside plant.

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Revision Information

Revision 930943A, which was released on October 3, 2014, corresponds to firmware version 10.4.0.

Browsers Supported

The following browsers have been tested against firmware version 10.4.0:

- Internet Explorer (version: 10)
- Firefox (also called Mozilla Firefox) (version: 23.0.1 and 25.0)
- Chrome (version: 29.0.1547.66 m)
- Safari (version: 5.1.7)

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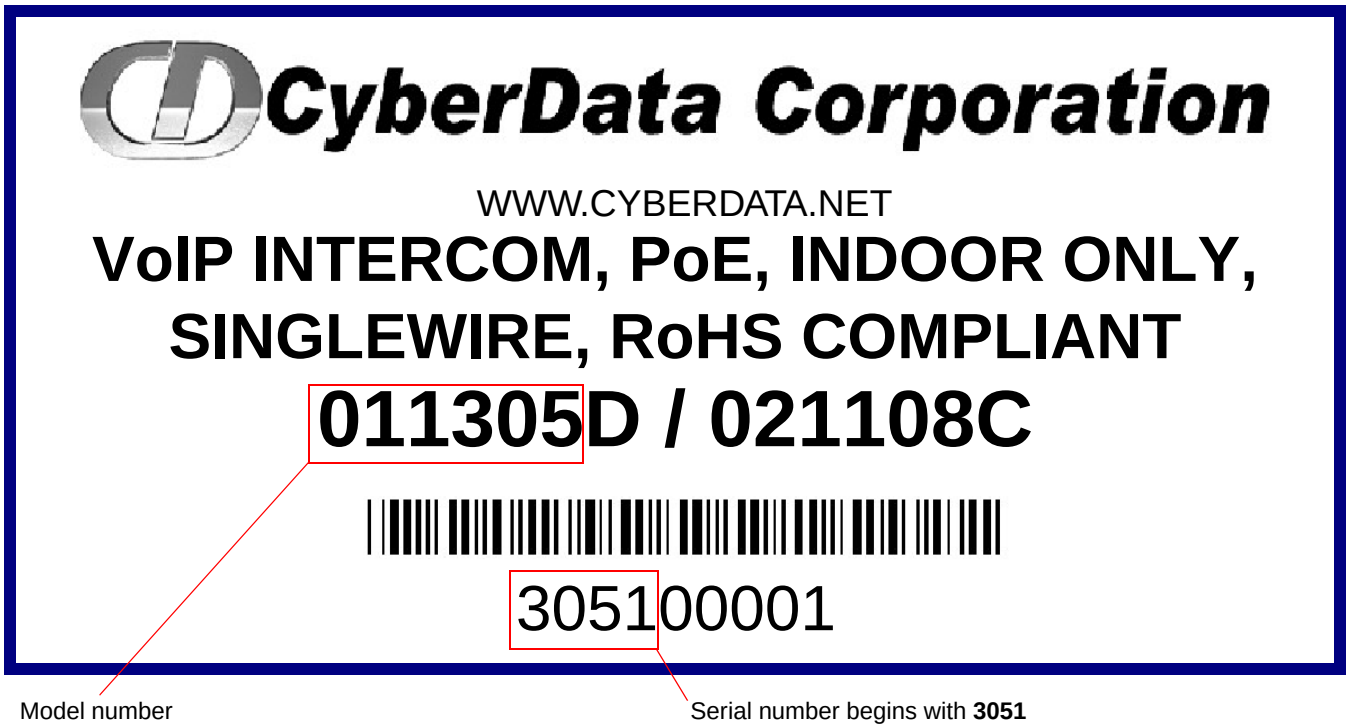
1 Product Overview

1.1 How to Identify This Product

To identify the VoIP Indoor Intercom, look for a model number label similar to the one shown in Figure 1-1. Confirm the following:

- The model number on the label should be **011305**.
- The serial number on the label should begin with **3051**.

Figure 1-1. Model Number Label



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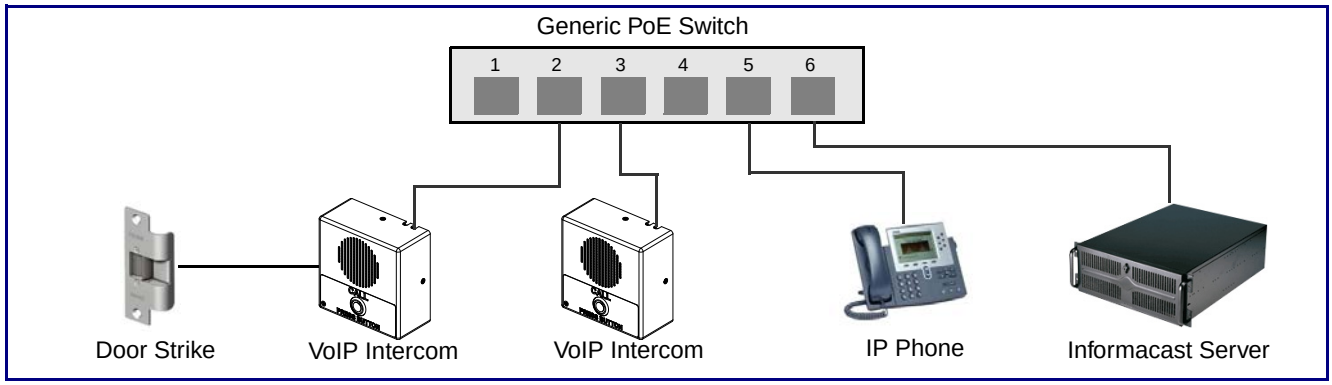
1.2 Typical System Installation

The Singlewire-enabled Voice-over-IP (VoIP) VoIP Indoor Intercom is a SIP endpoint designed to provide VoIP phone connectivity in a tamper proof and secure package.

Figure 1-2 illustrates how the VoIP Indoor Intercom can be installed as part of a VoIP phone system.

Figure 1-2. Typical Installation—Door Entry/Access Control



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1.3 Product Features

The Singlewire-enabled VoIP Indoor Intercom has the following features:

- InformaCast compliant
- InformaCast CK compliant
- Supports SRST (Survivable Remote Site Telephony) in a Cisco environment. SRST parameters are entered statically into the CyberData product's internal webpage.
- SIP compliant
- Dual speeds of 10 Mbps and 100 Mbps
- PoE 802.3af-enabled (Powered-over-Ethernet)
- Adaptive full duplex voice operation
- Network/Web management
- Network configurable speaker volume
- Network configurable door or intrusion sensor settings
- Network configurable relay activation settings
- Dial out extension supports the addition of comma delimited pauses before sending additional DTMF tones
- Network configurable microphone input sensitivity adjustment
- Network downloadable product firmware
- Doubles as a paging speaker
- Call button
- Call activity indicator (Call Button LED)
- Tamper proof design
- Concurrent SIP and multicast paging
- Dry contact relay for auxiliary control
- Autoprovisioning
- Configurable audio files
- Night Ringer
- Door closure and tamper alert signal
- Peer-to-peer capable

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1.4 Supported Protocols

The Intercom supports:

- SIP
- HTTP Web-based configuration

  Provides an intuitive user interface for easy system configuration and verification of Intercom operations.
- DHCP Client

  Dynamically assigns IP addresses in addition to the option to use static addressing.
- TFTP Client

  Facilitates hosting for the Autoprovisioning configuration file.
- RTP
- RTP/AVP - Audio Video Profile
- Facilitates autoprovisioning configuration values on boot
- Packet Time 20 ms
- Audio Encodings

  PCMU (G.711 mu-law)

  PCMA (G.711 A-law)

1.5 Supported SIP Servers

The following link contains information on how to configure the device for the supported SIP servers:

http://www.cyberdata.net/support/server/index.html

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1.6 Product Specifications

Table 1-1. Specifications

Category	Specification
Speaker Output	1 Watt Peak Power
Ethernet I/F	10/100 Mbps
Protocol	SIP RFC 3261 Compatible
Power Input	PoE 802.3af compliant or 8 to 12 VDC at 1000 mA
Operating Temperature	-10^{o} C to 50^{o} C (14^{o} F to 122^{o} F)
Payload Types	G711, A-law and µ-law
Regulatory Compliance	FCC Class A, UL 60950
Auxiliary Relay	1A at 30 VDC
Dimensions	5.118” x 5.118” x 2.25” (H x W x D)
Weight	0.71 lbs./shipping weight of 1.1 lbs. (0.32 kg/shipping weight of 0.5 kg)
Part Number	011305[a]

a.This number replaces the 011111 number.

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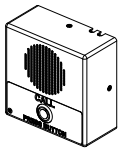
2 Installing the VoIP Indoor Intercom

2.1 Parts List

Table 2-1 illustrates the VoIP Indoor Intercom parts.

Note See Appendix A, "Mounting the Indoor Intercom" for physical mounting information.

Table 2-1. Parts List

Quantity	Part Name	Illustration
1	Intercom Assembly	
1	Installation Quick Reference Guide	
1	Intercom Mounting Accessory Kit	

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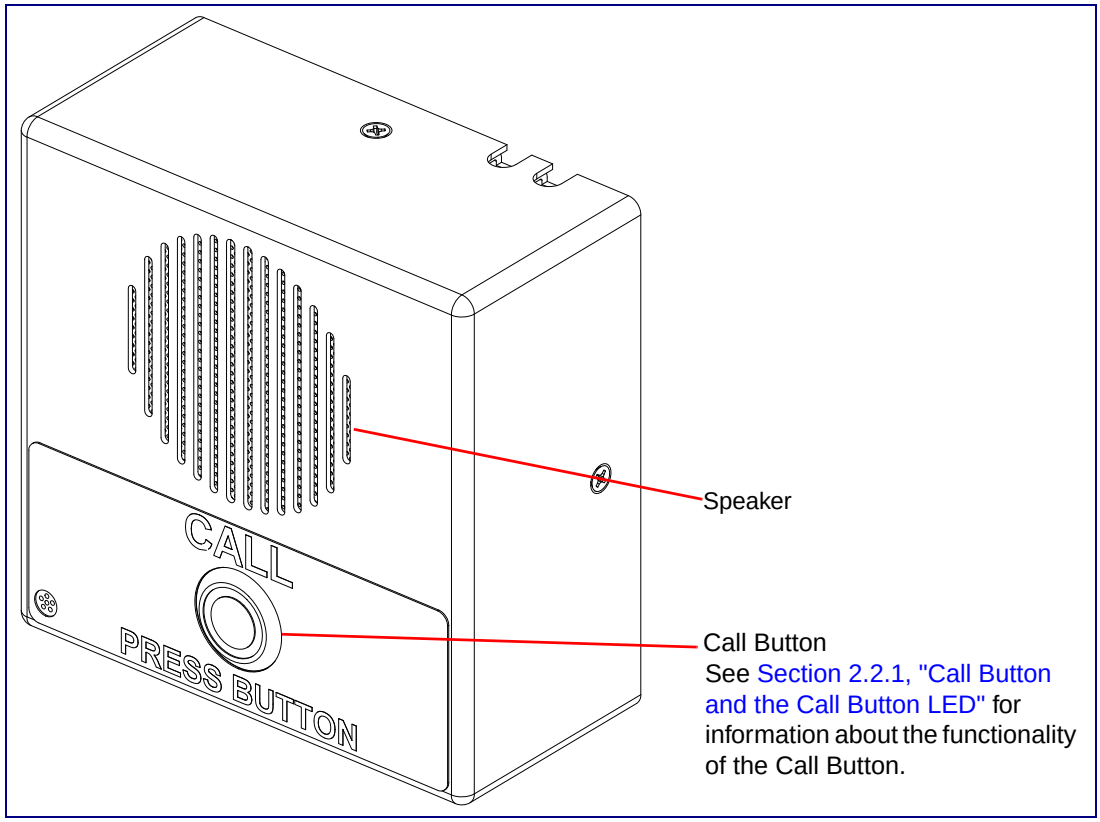
2.2 Intercom Components

Figure 2-1 shows the components of the Intercom.

Figure 2-1. Intercom Components


CALL
PRESS BUTTON
Speaker
Call Button
See Section 2.2.1, "Call Button and the Call Button LED" for information about the functionality of the Call Button.

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2.2.1 Call Button and the Call Button LED

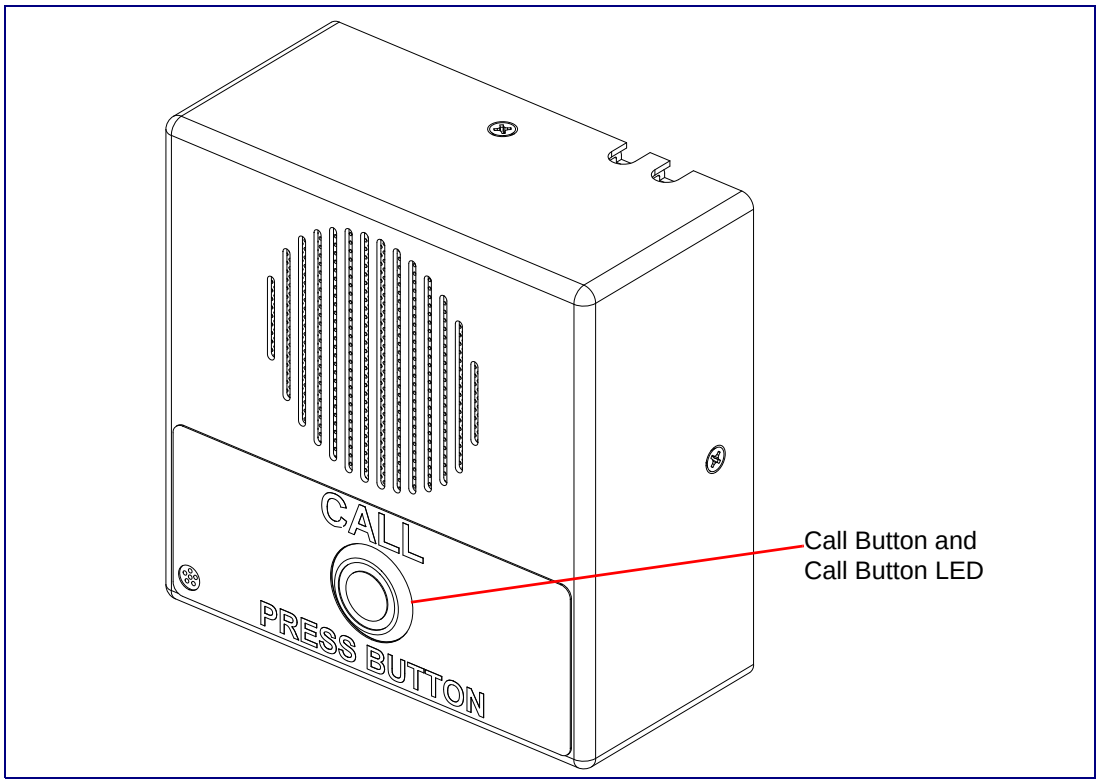
2.2.1.1 Calling with the The Call Button

- You may initiate a call by pressing the **Call** button.
- An active call is indicated by the Call Button LED blinking at one second intervals.
- The Intercom can automatically answer an incoming call.
- You can press the **Call** button to terminate an active call whether the call was an incoming call or a call that was initiated by you.

2.2.1.2 Call Button LED Function

- Upon initial power or reset, the Call Button LED will illuminate.
- When the software has finished initialization, the Call Button LED will blink twice.
- When a call is established (not just ringing), the Call Button LED will blink.
- On the **Device Configuration Page**, there is an option called **Button Lit When Idle**. This option sets the normal state for the indicator light. The Call Button LED will still blink during initialization and calls.
- The Call Button LED flashes briefly at the beginning of RTFM mode.

Figure 2-2. Call Button and Call Button LED



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2.3 Intercom Setup

2.3.1 Intercom Connections

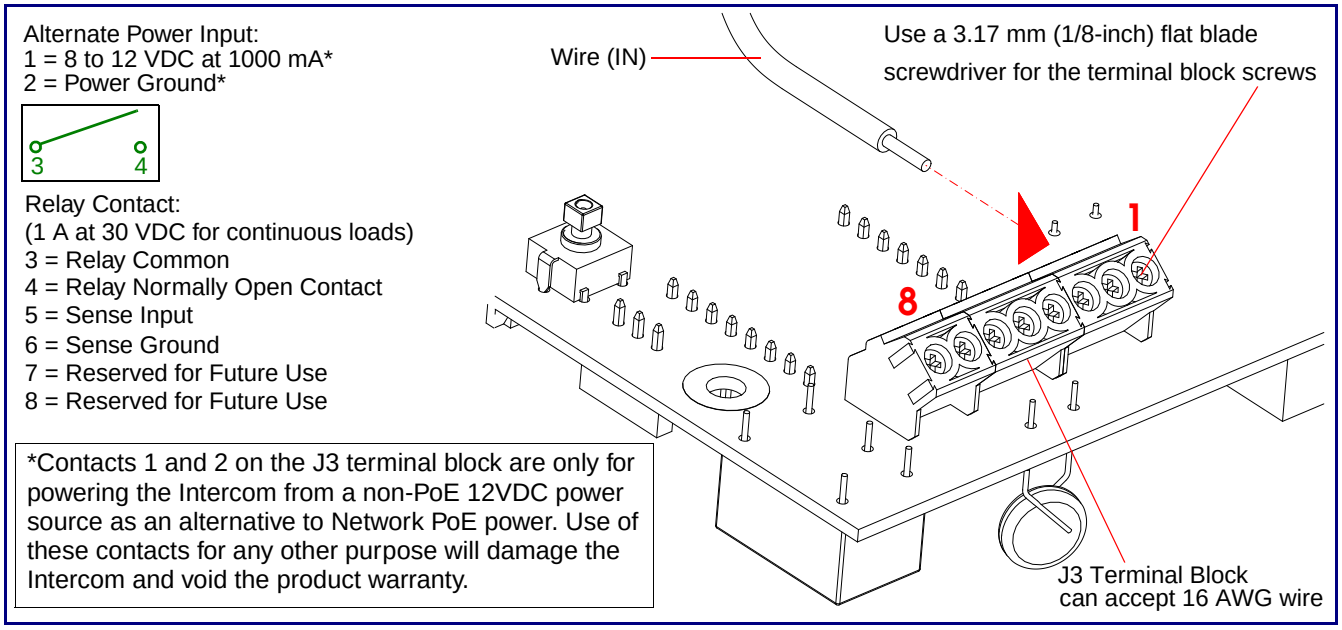
Figure 2-3 shows the pin connections on the J3 (terminal block). This terminal block can accept 16 AWG gauge wire.

Note As an alternative to using PoE power, you can supply 8 to 12 VDC at 1000 mA into the terminal block.

Caution

Equipment Hazard: Contacts 1 and 2 on the J3 terminal block are only for powering the Intercom from a non-PoE 12 VDC power source as an alternative to Network PoE power. Use of these contacts for any other purpose will damage the Intercom and void the product warranty.

Figure 2-3. Intercom Connections


Alternate Power Input:
1 = 8 to 12 VDC at 1000 mA*
2 = Power Ground*
3
4
Relay Contact:
(1 A at 30 VDC for continuous loads)
3 = Relay Common
4 = Relay Normally Open Contact
5 = Sense Input
6 = Sense Ground
7 = Reserved for Future Use
8 = Reserved for Future Use
*Contacts 1 and 2 on the J3 terminal block are only for powering the Intercom from a non-PoE 12VDC power source as an alternative to Network PoE power. Use of these contacts for any other purpose will damage the Intercom and void the product warranty.
Wire (IN)
Use a 3.17 mm (1/8-inch) flat blade screwdriver for the terminal block screws
1
8
J3 Terminal Block
can accept 16 AWG wire

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2.3.2 Using the On-Board Relay

Warning

Electrical Hazard: This product should be installed by a licensed electrician according to all local electrical and building codes.

Warning

Electrical Hazard: The relay contacts are dry and provided for a normally open and momentarily closed configuration. Neither the alternate power input nor PoE power can be used to drive a door strike.

Warning

Electrical Hazard: The relay does not support AC powered door strikes.
Any use of this relay beyond its normal operating range can cause damage to the product and is not covered under our warranty policy.

The CyberData device has a built-in relay that can be activated by a web configurable DTMF string that can be received from a VoIP phone supporting out of band (RFC2833) DTMF as well as a number of other triggering events. See the **Device Configuration Page** on the web interface for relay settings.

This relay can be used to trigger low current devices like strobes and security camera input signals as long as the load is not an inductive type and the relay is limited to a maximum of 1 Amp @ 30 VDC. Inductive loads have caused excessive “hum” and can interfere with the unit’s electronics.

We highly recommend that inductive load and high current devices use our Door Strike Intermediate Relay product (CD# 011269) (see Section 2.3.3.2, "Door Strike Intermediate Relay").

This relay interface also has a general purpose input port that can be used to monitor an external switch and generate an event.

For more information on the sensor options, see the **Sensor Configuration Page** on the web interface.

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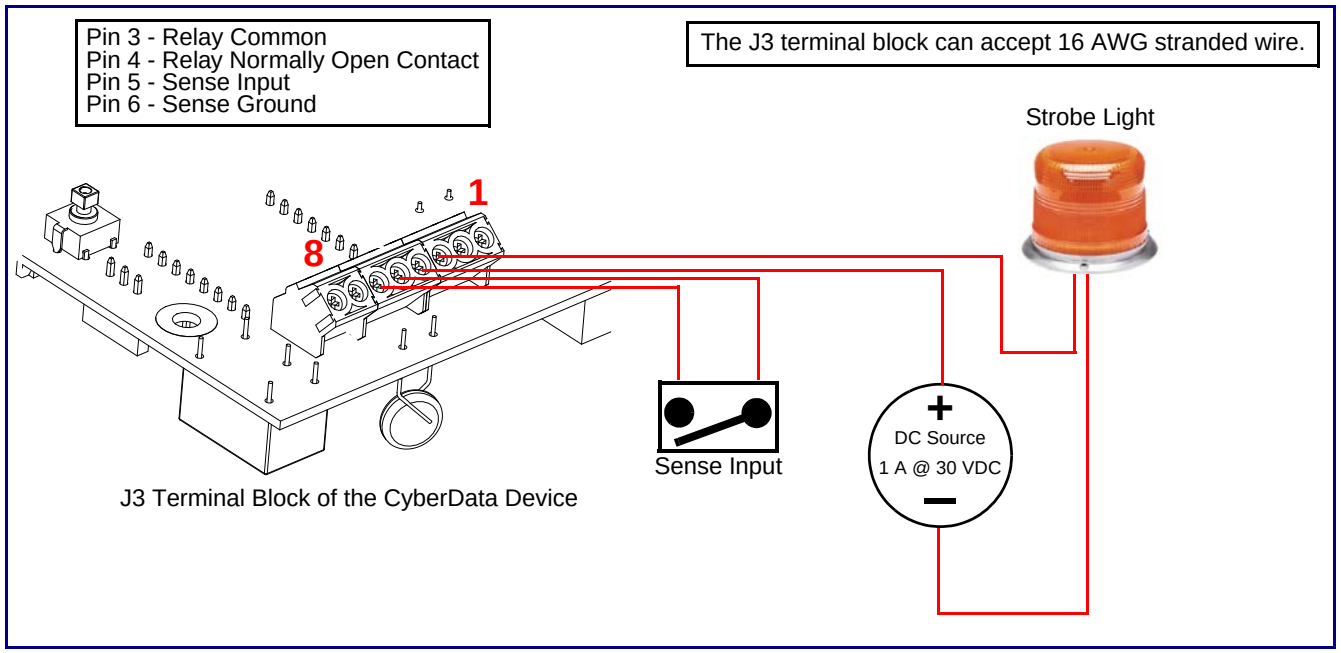
2.3.3 Wiring the Circuit

2.3.3.1 Devices Less than 1A at 30 VDC

If the power for the device is less than 1A at 30 VDC and is not an inductive load, then see Figure 2-4 for the wiring diagram.

Figure 2-4. Wiring Diagram


Pin 3 - Relay Common
Pin 4 - Relay Normally Open Contact
Pin 5 - Sense Input
Pin 6 - Sense Ground
The J3 terminal block can accept 16 AWG stranded wire.
Strobe Light
1
8
Sense Input
DC Source
1 A @ 30 VDC
J3 Terminal Block of the CyberData Device

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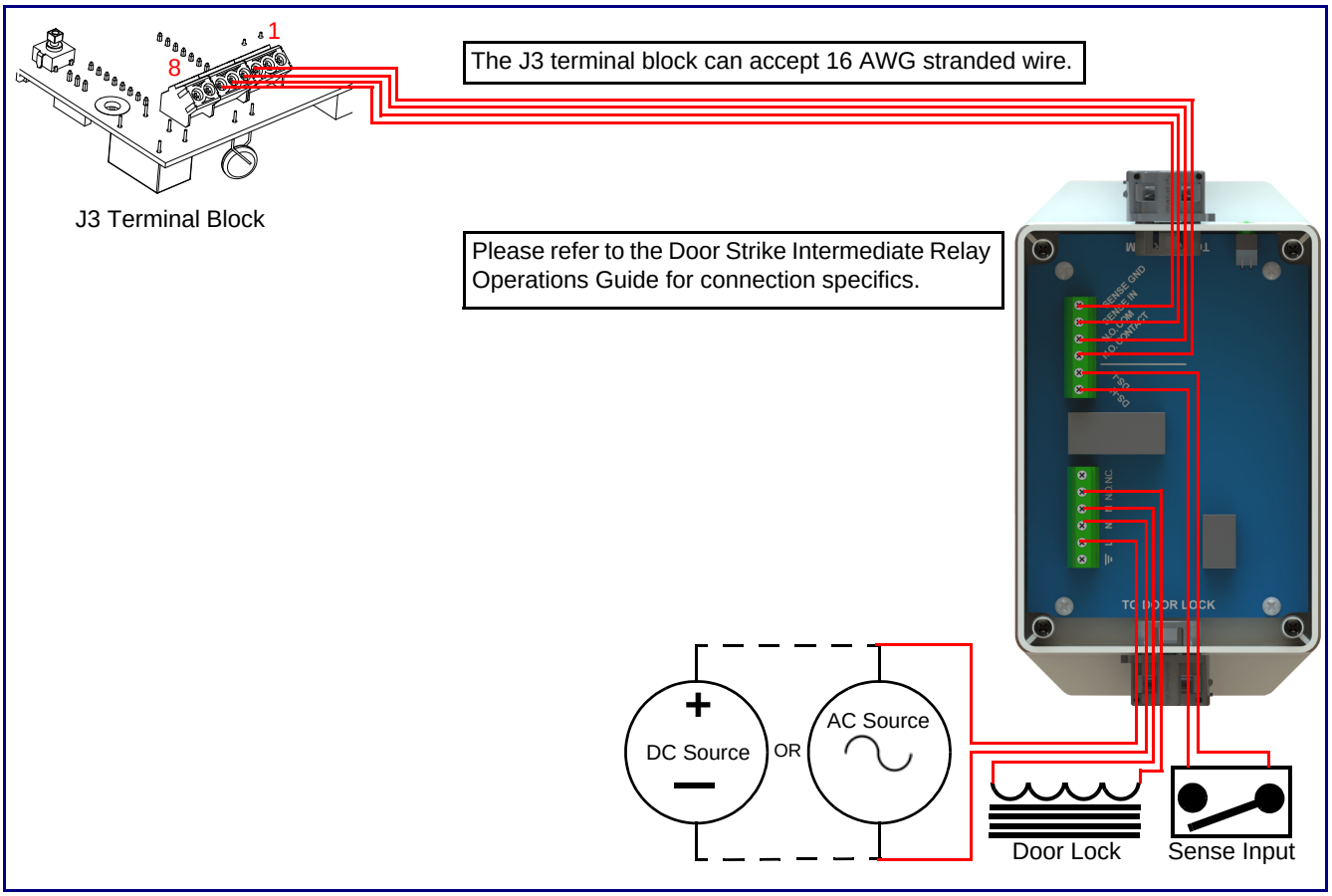
2.3.3.2 Door Strike Intermediate Relay

For wiring an electronic door strike, we recommend the use of our external Door Strike Intermediate Relay (CD# 011269).

This product provides an easier method of connecting standard door strikes as well as AC and higher voltage devices. See Figure 2-5 for the wiring diagram.

Figure 2-5. Wiring Diagram



If you have questions about connecting door strikes or setting up the web configurable options, please contact our support department.

http://www.cyberdata.net/support/voip/index.html

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2.3.4 Identifying the VoIP Intercom Connectors

See the following figures and tables to identify the connectors and functions of the Intercom.

Figure 2-6. Connector Locations

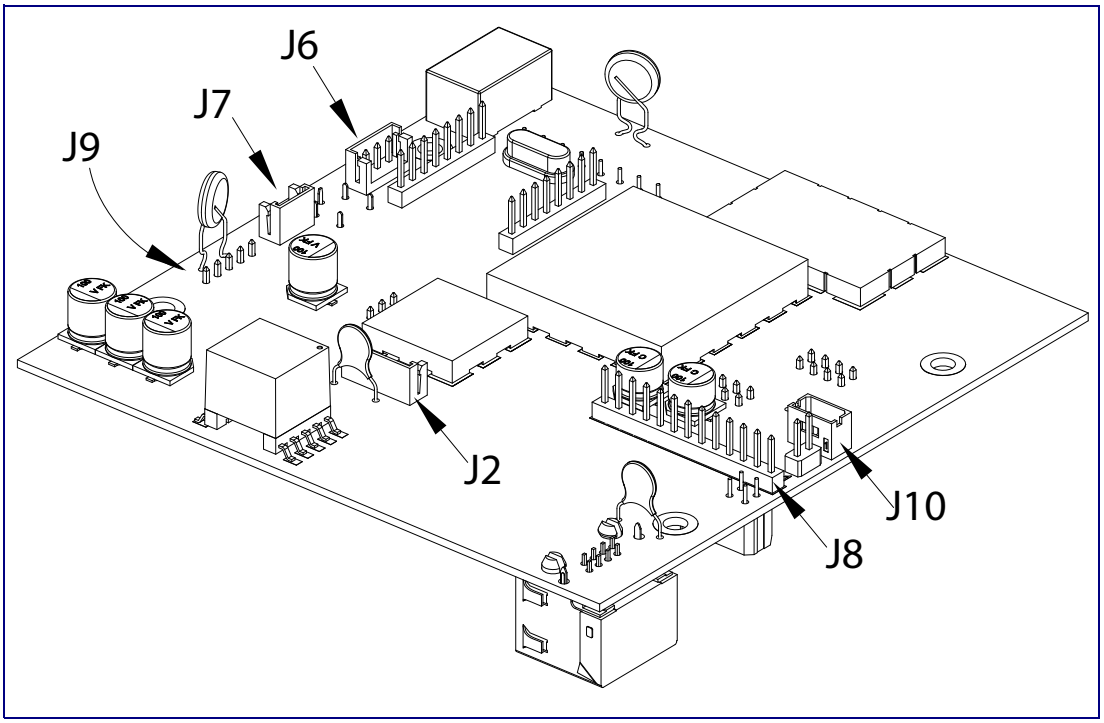

Table 2-2. Connector Functions

Connector	Function
J2	Call Button. LED Interface
J6	Microphone Interface
J7	Speaker Interface
J10	Proximity Sensor Interface - N/A
JP10	Disables the intrusion sensor when installed.

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Figure 2-7. Connector Locations

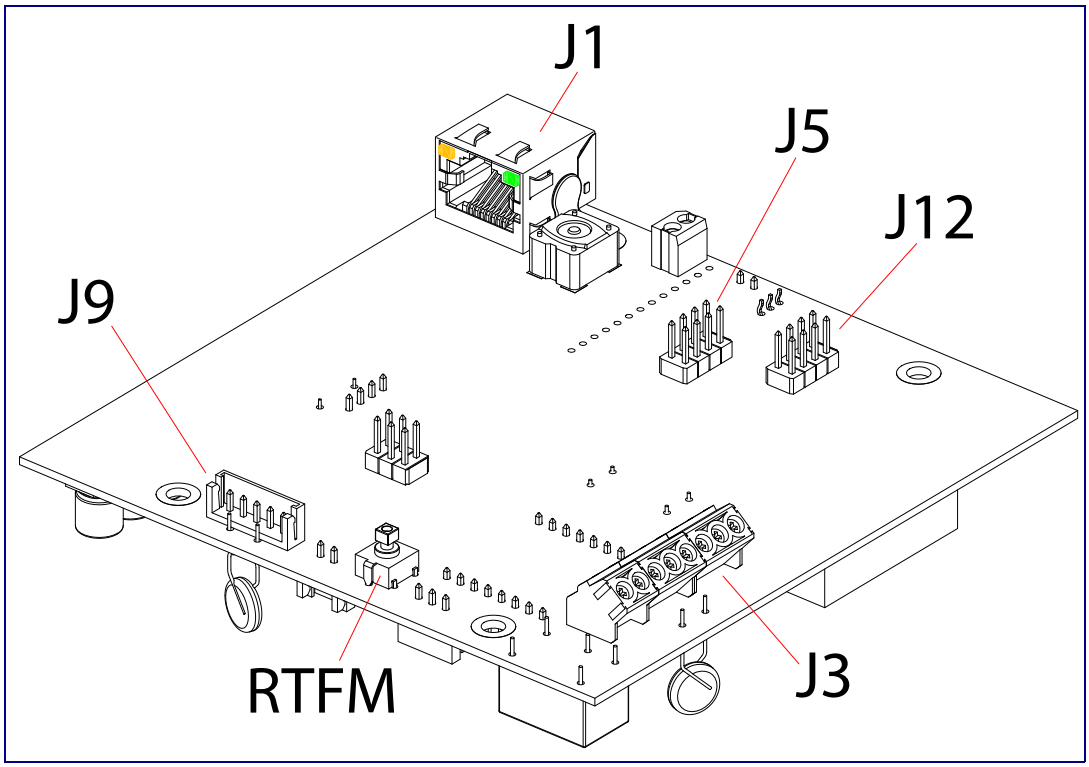

Table 2-3. Connector Functions

Connector	Function
JP1	Reset jumper[a]
J1	PoE Network Connection (RJ-45 ethernet)
J3	Terminal Block (see Figure 2-3)
J5	Factory Only—JTAG
J9	Reserved for future use
J12	Reserved for factory diagnostics
RTFM	See Section 2.3.6, "RTFM Button".

a.Do not install a jumper. Momentary short to reset. Permanent installation of a jumper would prevent the board from running all together.

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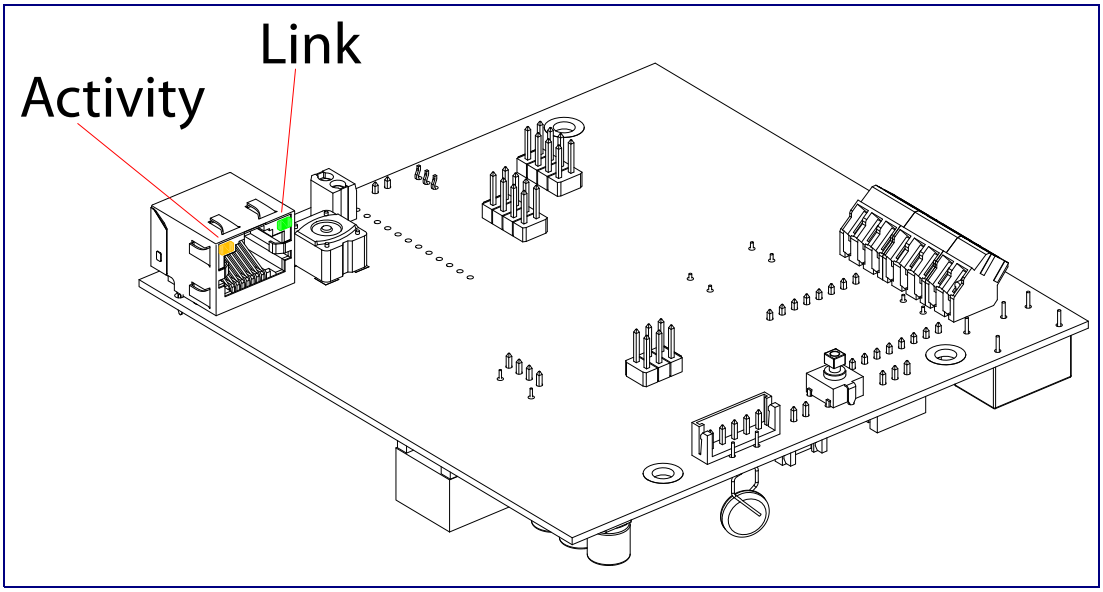
2.3.5 Activity and Link LEDs

2.3.5.1 Verifying the Network Connectivity and Data Rate

When you plug in the Ethernet cable or power supply to the Intercom, the following occurs:

- The square, **YELLOW** **Activity** light blinks when there is network activity (see Figure 2-8).
- The square, **GREEN** **Link** light above the Ethernet port indicates that the network connection has been established (see Figure 2-8).

Figure 2-8. Activity and Link LED



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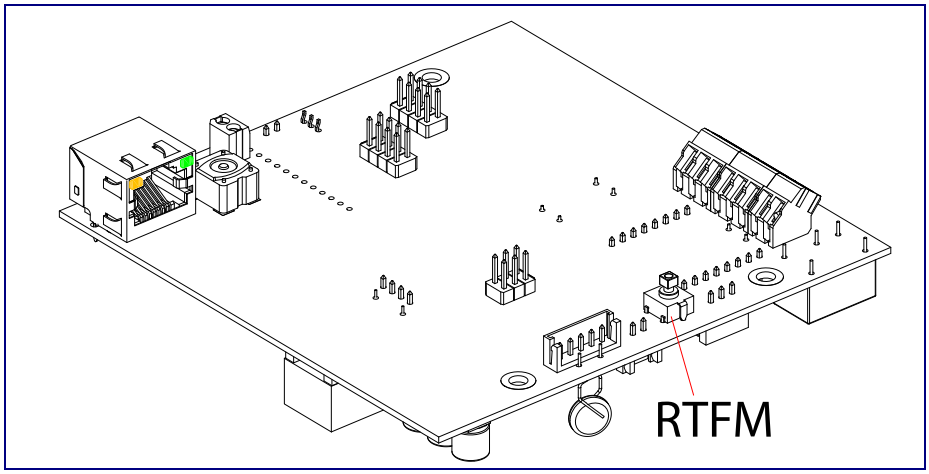
2.3.6 RTFM Button

When the Intercom is operational and linked to the network, you can use the Reset Test Function Management **(RTFM)** button (see Figure 2-9) on the Intercom board to announce and confirm the Intercom's IP Address and test to see if the audio is working.

Note You must do these tests prior to final assembly.

Figure 2-9. RTFM Button (SW1)



2.3.6.1 Announcing the IP Address

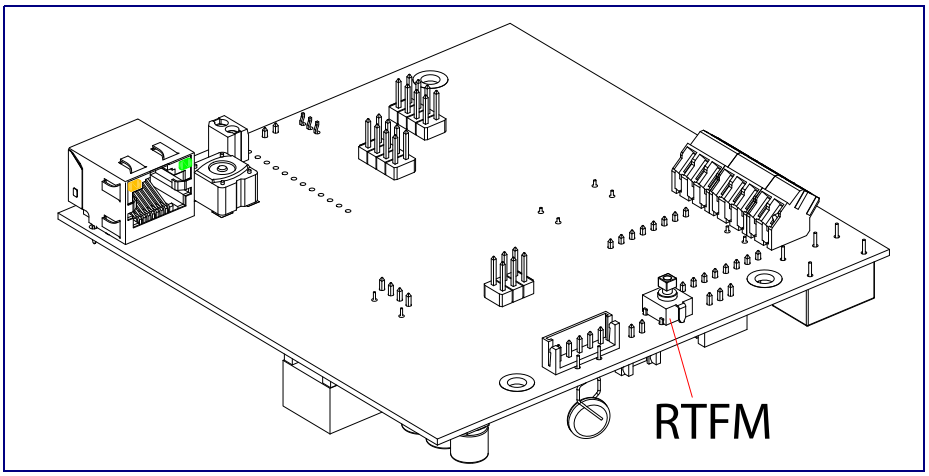
To announce a device's current IP address:

1. Press and release the RTFM button (see Figure 2-10) within a five second window.

Note The device will use DHCP to obtain the new IP address (DHCP-assigned address or default to 10.10.10.10 if a DHCP server is not present).

Note Pressing and holding the RTFM button for longer than five seconds will restore the device to the factory default settings.

Figure 2-10. RTFM Button (SW1)



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2.3.6.2 Restoring the Factory Default Settings

When troubleshooting configuration problems, it is sometimes convenient to restore the device to a known state.

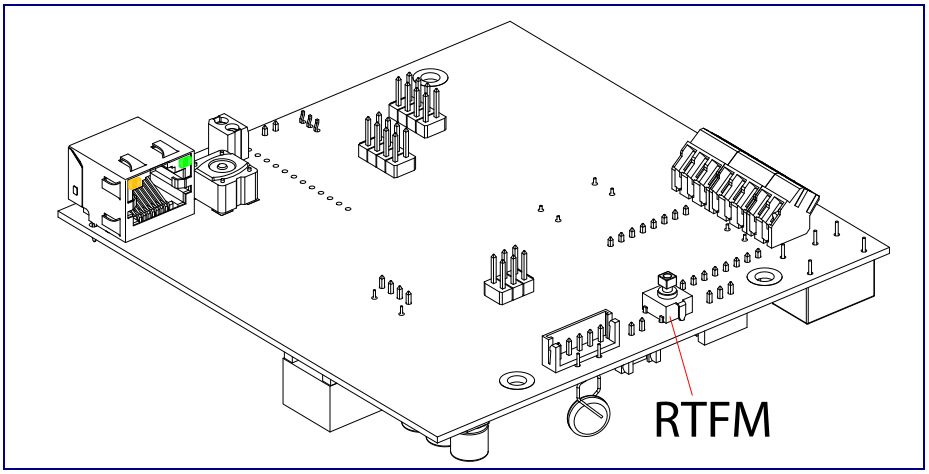
Note Each Intercom is delivered with factory set default values.

To restore the factory default settings:

1. Press and hold the **RTFM button** (see **SW1** in Figure 2-11) for more than five seconds.
2. The device announces that it is restoring the factory default settings.

Note The device will use DHCP to obtain the new IP address (DHCP-assigned address or default to 10.10.10.10 if a DHCP server is not present).

Figure 2-11. RTFM Button



2.3.7 Adjust the Volume

You can adjust the volume through the SIP Volume, Multicast Volume, Ring Volume, and Sensor Volume settings on the Device Configuration Page.

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2.4 Configure the Intercom Parameters

To configure the Intercom online, use a standard web browser.

Configure each Intercom and verify its operation *before* you mount it. When you are ready to mount an Intercom, refer to Appendix A, "Mounting the Indoor Intercom" for instructions.

2.4.1 Factory Default Settings

All Intercoms are initially configured with the following default IP settings:

When configuring more than one Intercom, attach the Intercoms to the network and configure one at a time to avoid IP address conflicts.

Table 2-4. Factory Default Settings

Parameter	Factory Default Setting
IP Addressing	DHCP
IP Address[a]	10.10.10.10
Web Access Username	admin
Web Access Password	admin
Subnet Mask[a]	255.0.0.0
Default Gateway[a]	10.0.0.1

a. Default if there is not a DHCP server present.

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2.4.2 Intercom Web Page Navigation

Table 2-5 shows the navigation buttons that you will see on every Intercom web page.

Table 2-5. Web Page Navigation

Web Page Item	Description
	Link to the **Home** page.
	Link to the **Device Configuration** page.
	Link to the **Networking** page.
	Link to go to the **SIP Configuration** page.
	Link to go to the **Nightringer** page.
	Link to the **Sensor Configuration** page.
	Link to the **Multicast Configuration** page.
	Link to the **Audio Configuration** page.
	Link to the **Event Configuration** page.
	Link to the **Autoprovisioning Configuration** page.
	Link to the **Update Firmware** page.

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2.4.3 Log in to the Configuration Home Page

1. Open your browser to the Intercom IP address.

Note If the network does not have access to a DHCP server, the device will default to an IP address of 10.10.10.10.

Note Make sure that the PC is on the same IP network as the Intercom.

Note You may also download CyberData's VoIP Discovery Utility program which allows you to easily find and configure the default web address of the CyberData VoIP products.

CyberData's VoIP Discovery Utility program is available at the following website address:

http://www.cyberdata.net/support/voip/discovery.html

Note The Intercom ships in DHCP mode. To get to the **Home** page, use the discovery utility to scan for the device on the network and open your browser from there.

2. When prompted, use the following default **Web Access Username** and **Web Access Password** to access the **Home Page** (Figure 2-12):

   Web Access Username: **admin**

   Web Access Password: **admin**

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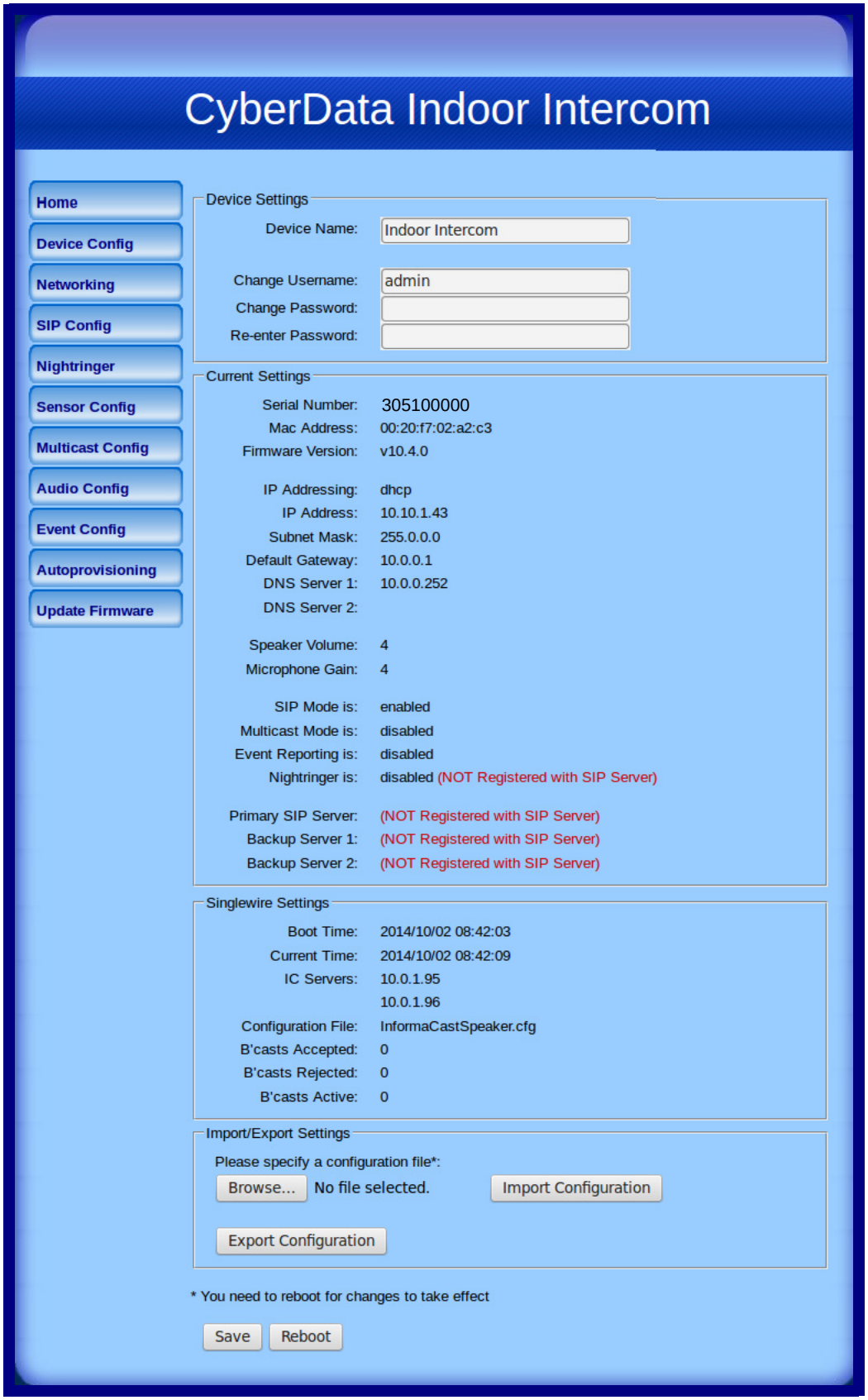
Figure 2-12. Home Page



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3. On the **Home Page**, review the setup details and navigation buttons described in Table 2-6.

Table 2-6. Home Page Overview

Web Page Item	Description
Device Settings	
Device Name	Shows the device name.
Change Username	Type in this field to change the username.
Change Password	Type in this field to change the password.
Re-enter Password	Type the password again in this field to confirm the new password.
Current Settings	
Serial Number	Shows the device serial number.
Mac Address	Shows the device Mac address.
Firmware Version	Shows the current firmware version.
IP Addressing	Shows the current IP addressing setting (**DHCP** or **static**).
IP Address	Shows the current IP address.
Subnet Mask	Shows the current subnet mask address.
Default Gateway	Shows the current default gateway address.
DNS Server 1	Shows the current DNS Server 1 address.
DNS Server 2	Shows the current DNS Server 2 address.
Speaker Volume	Shows the current speaker volume level.
Microphone Gain	Shows the current microphone gain level.
SIP Mode is	Shows the current status of the SIP mode.
Multicast Mode is	Shows the current status of the Multicast mode.
Event Reporting is	Shows the current status of the Event Reporting mode.
Nightringer is	Shows the current status of the Nightringer mode.
Primary SIP Server	Shows the current status of the Primary SIP Server.
Backup Server 1	Shows the current status of Backup Server 1.
Backup Server 2	Shows the current status of Backup Server 2.
Import/Export Settings	
Browse...	Press the **Browse** button to select a configuration file to import.
Import Configuration	Press the **Import Configuration** button to save a board configuration to the board. **Note**: The board will have to be reset before changes will take effect.
Export Configuration	Press the **Export Configuration** button to download the current board configuration.
Save	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
Reboot	Click on the **Reboot** button to reboot the system.

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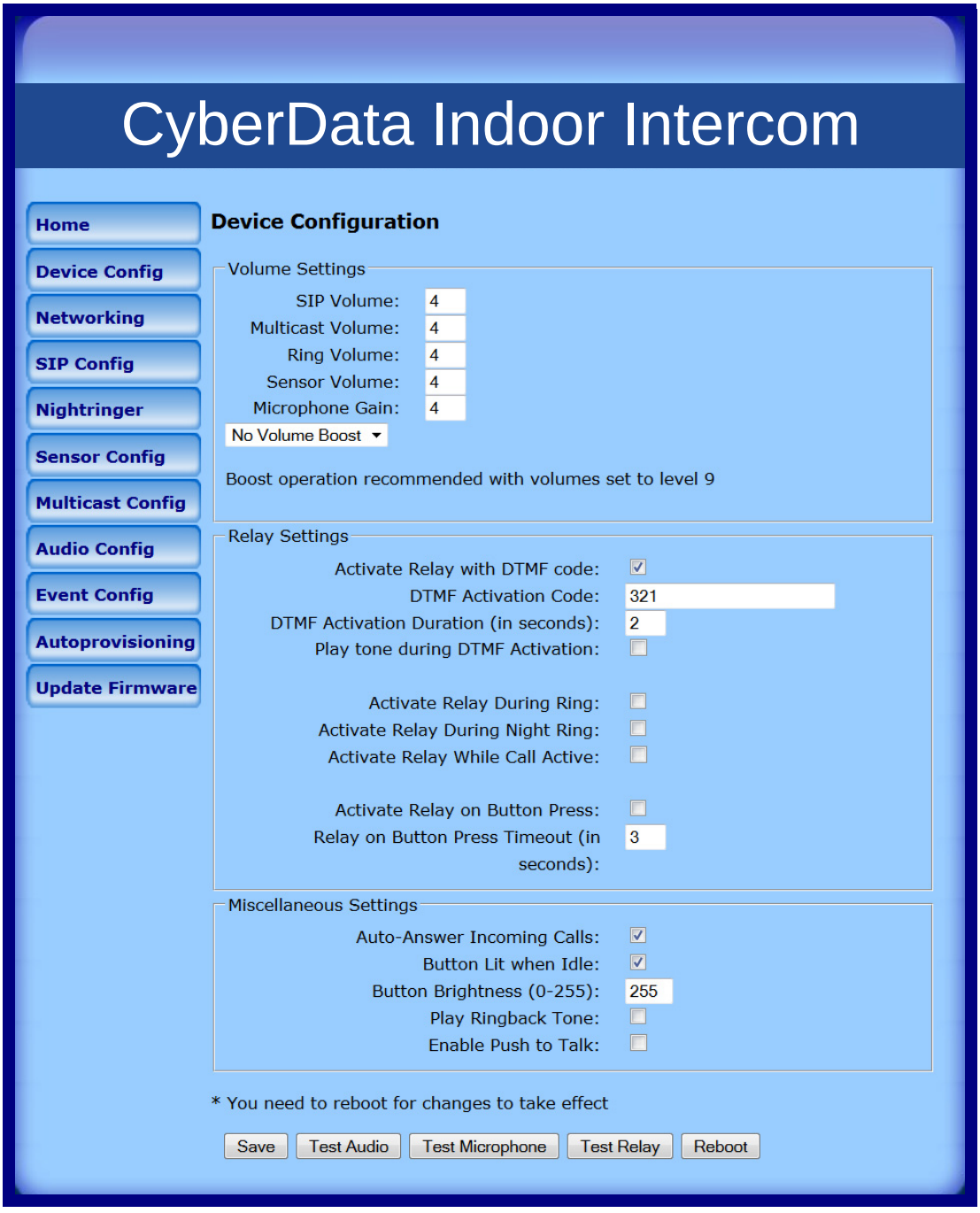
2.4.4 Configure the Device

1. Click the **Device Configuration** button to open the **Device Configuration** page. See Figure 2-13.

Figure 2-13. Device Configuration Page



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2. On the **Device Configuration** page, you may enter values for the parameters indicated in Table 2-7.

Table 2-7. Device Configuration Parameters

Web Page Item	Description
Volume Settings	
SIP Volume	Type the desired SIP volume level into this field.
Multicast Volume	Type the desired Multicast volume level into this field.
Ring Volume	Type the desired Ring volume level into this field.
Sensor Volume	Type the desired Sensor volume level into this field.
Microphone Gain	Type the desired microphone gain level into this field.
No Volume Boost Volume Boost 1 Volume Boost 2 Volume Boost 3	Normal operation of the product can be met with volume levels **0** through **9**. **0** being mute and **9** being the loudest volume that in a normal arm's length and average background noise, will enable full duplex operation and give the best quality of sound output. The volume boost options increase the output of the speaker by: 3db for Boost level 1 6db for Boost level 2 9db for Boost level 3 If the user would like a higher output from the speaker, the Boost settings are available. However, operation in **Boost Mode** may overdrive or clip the audio if, for example, the phone that is connected has a high microphone gain or if the person has a loud voice talking too close to the microphone. The acoustic echo canceller also has a harder time maintaining full duplex operation when in the **Boost Mode**. The product may drop from full duplex operation into half/duplex mode while in **Boost Mode**. Contact CyberData support for additional information if needed.
Relay Settings	
Activate Relay with DTMF Code	When selected, the relay can be activated with a DTMF code.
DTMF Activation Code	Type the desired DTMF activation code (25 character limit).
DTMF Activation Duration (in seconds)	Type the desired DTMF activation duration (in seconds) (2 character limit [activation times now go up to 99 seconds]). **NOTE**: A DTMF activation duration of **0** will toggle the relay indefinitely or until the activation code is sent again
Play tone during DTMF Activation	When selected, the device will play a tone when the relay is activated with a DTMF code.

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Table 2-7. Device Configuration Parameters (continued)

Web Page Item	Description
Activate Relay During Ring	When selected, the relay will be activated for as long as the call is active. **NOTE**: When the phone is set to **Auto Answer**, it will not ring and this option does nothing.
Activate Relay During Night Ring	Check this box to activate the relay for as long as a Night Ring tone is ringing.
Activate Relay While Call Active	When selected, the relay will be activated for as long as the call is active.
Activate Relay on Button Press	When selected, the relay will be activated when the Call Button is pressed.
Relay on Button Press Timeout (in seconds)	Type the desired time (in seconds) that you want the relay to activate after the Call Button is pressed (1 character limit).
Miscellaneous Settings	
Auto-Answer Incoming Calls	When selected, the device will automatically answer incoming calls. When **Auto Answer** is Off, the device will play a ringtone through the Intercom speaker until someone presses the button.
Button Lit When Idle	When selected, the Call Button remains lit when idle.
Button Brightness (0-255)	Type the desired Call Button LED brightness level (0-255).
Play Ringback Tone	When selected, you will hear a ringback tone while making a call.
Enable Push to Talk	This option is for noisy environments. When enabled, the microphone will be muted normally. When the button is pressed and held, it will unmute the microphone and allow the operator to send audio back. **NOTE**: When **Enable Push to Talk** is enabled, you cannot stop an active call with the call button. The device on the other end will need to end the call. **NOTE**: **Enable Push to Talk** will not work on some older hardware.
Save	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
Test Audio	Click on the **Test Audio** button to do an audio test. When the **Test Audio** button is pressed, you will hear a voice message for testing the device audio quality and volume.
Test Microphone	Click on the **Test Microphone** button to do a microphone test. When the **Test Microphone** button is pressed, the following occurs: 1. The device will immediately start recording 3 seconds of audio. 2. The device will beep (indicating the end of recording). 3. The device will play back the recorded audio.

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Table 2-7. Device Configuration Parameters (continued)

Web Page Item	Description
Test Relay	Click on the **Test Relay** button to do a relay test.
Reboot	Click on the **Reboot** button to reboot the system.

Note You can change the **SIP Volume**, **Multicast Volume**, **Ring Volume**, **Sensor Volume**, and **Microphone Gain** without rebooting the device. You must save and reboot the device for other changes to take effect.

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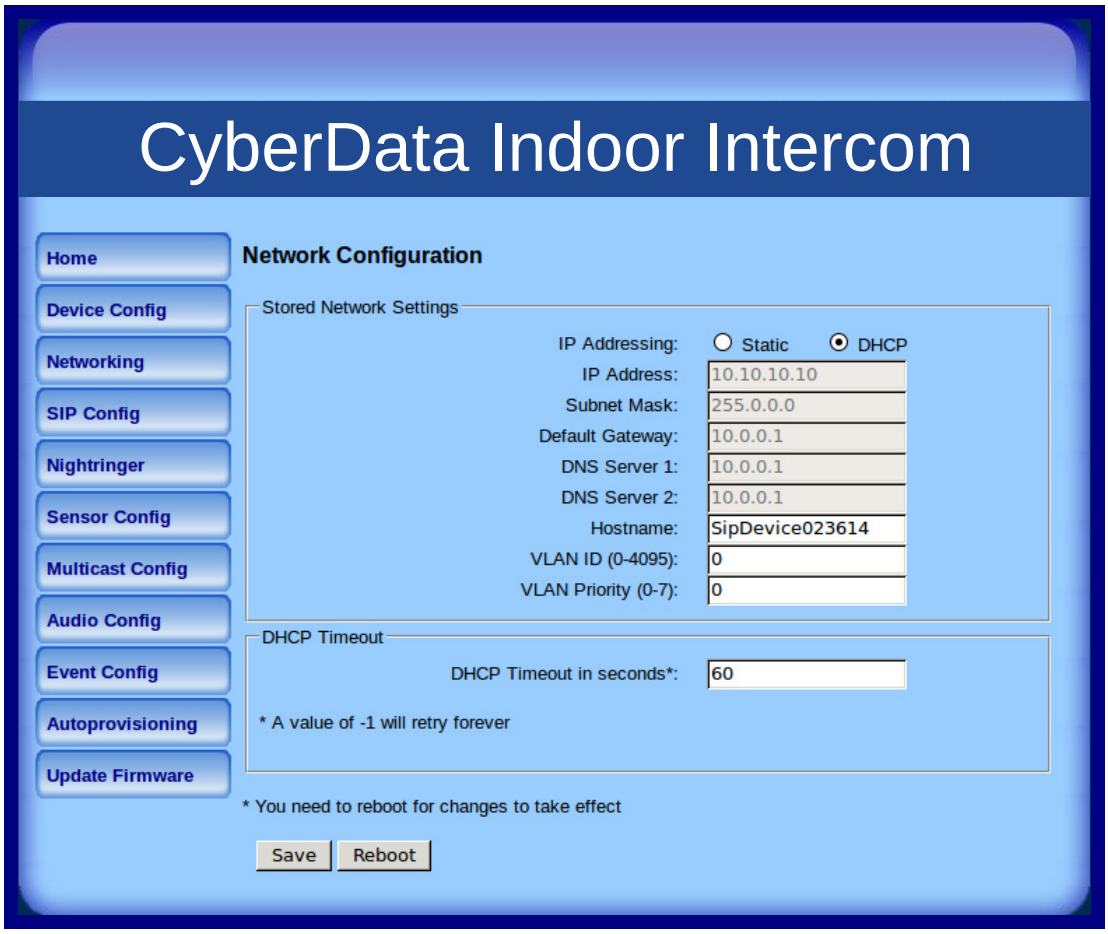
2.4.5 Configure the Network Parameters

1. Click the **Networking** button to open the **Network Configuration** page (Figure 2-14).

Figure 2-14. Network Configuration Page



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2. On the **Network Configuration** page, enter values for the parameters indicated in Table 2-8.

Table 2-8. Network Configuration Parameters

Web Page Item	Description
Stored Network Settings	
IP Addressing	Select either **DHCP IP Addressing** or **Static IP Addressing** by marking the appropriate radio button. If you select **Static**, configure the remaining parameters indicated in Table 2-8. If you select **DHCP**, go to Step Note.
IP Address	Enter the Static IP address.
Subnet Mask	Enter the Subnet Mask address.
Default Gateway	Enter the Default Gateway address.
DNS Server 1	Enter the DNS Server 1 address.
DNS Server 2	Enter the DNS Server 2 address.
Hostname	This is the hostname provided to the DHCP server. This can be used in conjunction with a DNS server to address the device by host name instead of by IP address. Check your DHCP server and DNS server documentation for more information.
VLAN ID (0-4095)	Enter the VLAN ID number. **Note**: The device supports 802.11Q VLAN tagging support. The switch port connected to the device will need to be in “trunking mode” for the VLAN tags to propagate.
VLAN Priority (0-7)	Enter the VLAN priority number.
DHCP Timeout	
DHCP Timeout in seconds	Enter the desired timeout duration (in seconds) that the device will wait for a response from the DHCP server before defaulting back to the stored static IP address. **Note**: A value of **-1** will cause the device to retry indefinitely and a value of **0** will cause the device to reset to a default of 60 seconds.
Save	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
Reboot	Click on the **Reboot** button to reboot the system.

Note You must click on the **Save** button and then the **Reboot** button for the changes to take effect.

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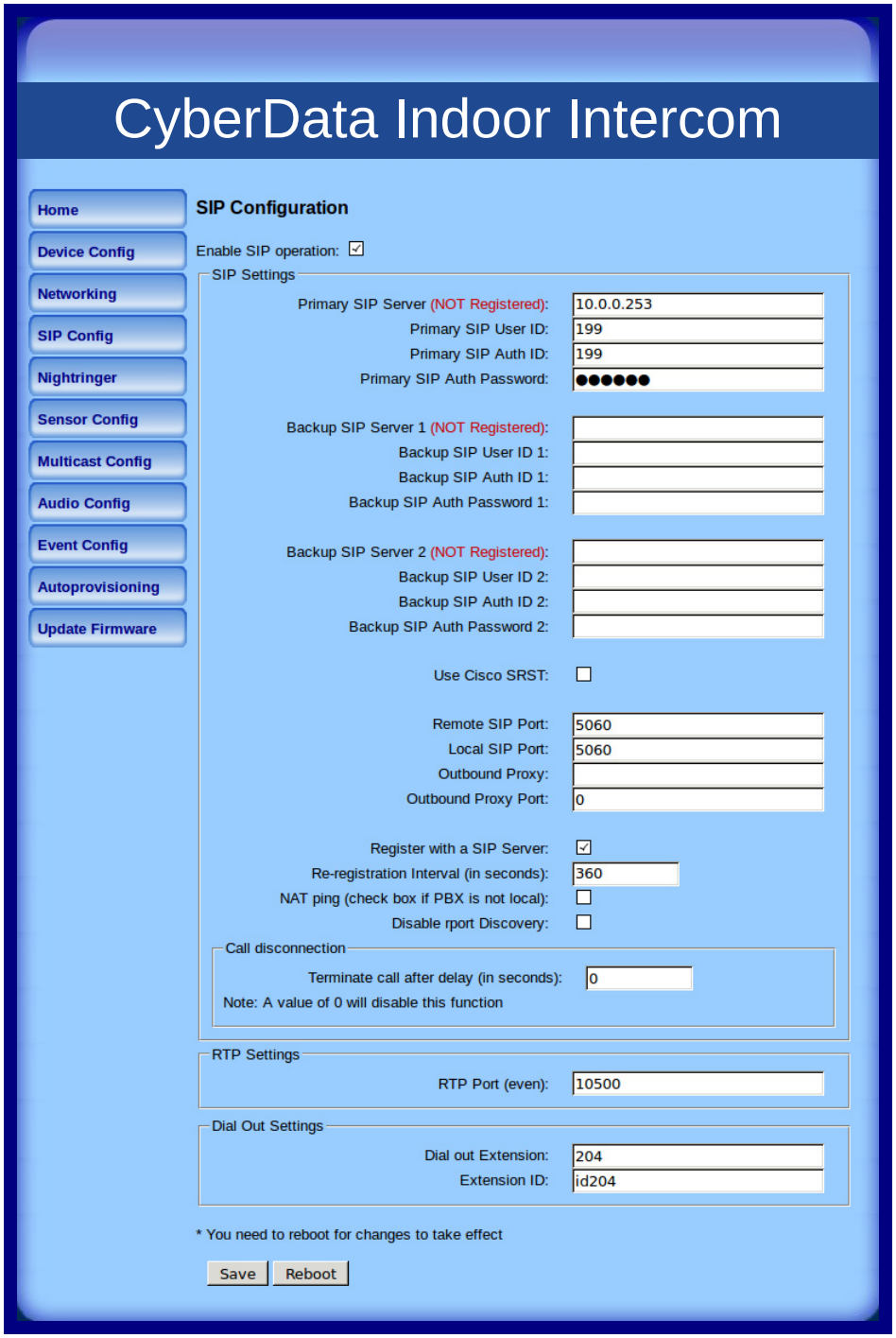
2.4.6 Configure the SIP Parameters

1. Click **SIP Config** to open the **SIP Configuration** page (Figure 2-15).

Note For specific server configurations, go to the following website address: http://www.cyberdata.net/support/server/index.html

Figure 2-15. SIP Configuration Page



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2. On the **SIP Configuration** page, enter values for the parameters indicated in Table 2-9.

Table 2-9. SIP Configuration Parameters

Web Page Item	Description
Enable SIP Operation	Enables or disables SIP operation.
SIP Settings	
Primary SIP Server [registration status]	Use this field to set the address (in dotted decimal notation or as a canonical name) for the Primary SIP Server. This field can accept canonical names of up to 255 characters in length.
Primary SIP User ID	Type the **SIP User ID** for the Primary SIP Server (up to 64 alphanumeric characters).
Primary SIP Auth ID	Type the **Authenticate ID** for the Primary SIP Server (up to 64 alphanumeric characters).
Primary SIP Auth Password	Type the **Authenticate Password** for the Primary SIP Server (up to 64 alphanumeric characters).
Backup SIP Server 1 Backup SIP Server 2	• If all of the **Primary SIP Server** and **Backup SIP Server** fields are populated, the device will attempt to stay registered with all three servers all of the time. You can leave the **Backup SIP Server 1** and **Backup SIP Server 2** fields blank if they are not needed. • In the event of a registration failure on the **Primary SIP Server**, the device will use the next highest priority server for outbound calls (**Backup SIP Server 1**). If **Backup SIP Server 1** fails, the device will use **Backup SIP Server 2**. • If a higher priority SIP Server comes back online, the device will switch back to this server.
Backup SIP User ID 1 Backup SIP User ID 2	Type the **SIP User ID** for the Backup SIP Server (up to 64 alphanumeric characters).
Backup SIP Auth ID 1 Backup SIP Auth ID 2	Type the **SIP Authenticate ID** for the Backup SIP Server (up to 64 alphanumeric characters).
Backup SIP Auth Password 1 Backup SIP Auth Password 2	Type the **SIP Authenticate Password** for the Backup SIP Server (up to 64 alphanumeric characters).
Use Cisco SRST	When selected, the backup servers are handled according to Cisco SRST (Survivable Remote Site Telephony).
Remote SIP Port	Type the **Remote SIP Port** number (default 5060) (8 character limit).
Local SIP Port	Type the **Local SIP Port** number (default 5060) (8 character limit).
Outbound Proxy	Type the Outbound Proxy as either a numeric IP address in dotted decimal notation or the fully qualified host name (255 character limit [FQDN]).
Outbound Proxy Port	Type the Outbound Proxy Port number (8 character limit).
Register with a SIP Server	Check this box to enable SIP Registration. For information about Point-to-Point Configuration, see Section 2.4.6.2, "Point-to-Point Configuration".
Re-registration Interval (in seconds)	The SIP Registration lease time in seconds.

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Table 2-9. SIP Configuration Parameters (continued)

Web Page Item	Description
NAT ping (check box if PBX is not local)	Check this box if the PBX server is remote and you are experiencing problems establishing calls with the PBX.
Disable rport Discovery	Check this box prevent the device from including the public WAN IP address in the contact information that is sent to the remote SIP servers. This will generally only need to be enabled when using an SBC in conjunction with a remote SIP server.
Call Disconnection	
Terminate call after delay (in seconds)	Type the desired number of seconds that you want to transpire after a connection delay before a call is terminated. Note: A value of **0** will disable this function.
RTP Settings	
RTP Port (even)	Specify the port number used for the RTP stream after establishing a SIP call. This port number has to be an even number and defaults to 10500.
Dial Out Settings	
Dial Out Extension	Type the dial out extension number (64 character limit). **Note**: For information about dial-out extension strings and DTMF tones, see Section 2.4.6.1, "Dial Out Extension Strings and DTMF Tones (using rfc2833)".
Extension ID	Type the desired Extension ID (64 character limit).
Save	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
Reboot	Click on the **Reboot** button to reboot the system.

Note You must click on the **Save** button and then the **Reboot** button for the changes to take effect.

2.4.6.1 Dial Out Extension Strings and DTMF Tones (using rfc2833)

On the **SIP Configuration Page**, dial out extensions support the addition of comma delimited pauses and sending additional DTMF tones (using rfc2833). The first comma will pause three seconds after a call is first established with a remote device. Subsequent commas will pause for 2 seconds. A pause of one second will be sent after each numerical digit.

Table 2-10. Examples of Dial-Out Extension Strings

Extension String	Resulting Action
302	Dial out extension 302 and establish a call
302,2	Dial out extension 302 and establish a call, wait 3 seconds then send the DTMF tone '2'
302,25,,,4,,1	Dial out extension 302 and establish a call, wait 3 seconds then send the DTMF tone '2', send out DTMF tone 5, wait 6 seconds, send out DTMF tone 4, wait 4 seconds, send out DTMF tone 1

Note The maximum number of total characters in the dial-out field is 64.

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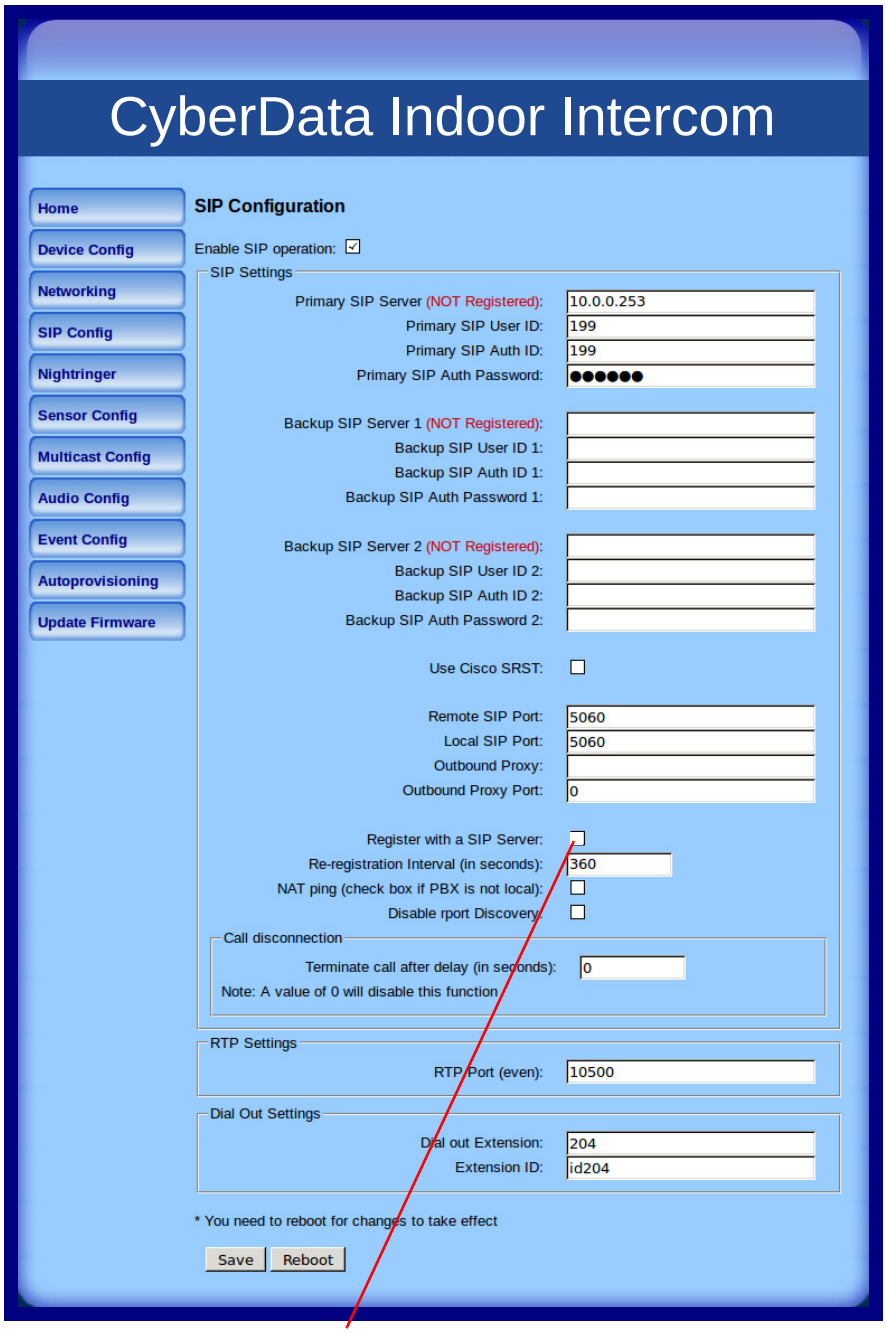
2.4.6.2 Point-to-Point Configuration

When the board is set to not register with a SIP server (see Figure 2-16), it's possible to set the intercom to dial out to a single endpoint.

In this case, the dial-out extension should be the IP address of the remote device. The Intercom can also receive Point-to-Point calls. The delayed DTMF functionality is available in the Point-to-Point Mode.

Note Receiving point-to-point SiP calls may not work with all phones.

Figure 2-16. SIP Configuration Page Set to Point-to-Point Mode



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2.4.6.3 Delayed DTMF

On the **SIP Configuration** page the dial out extension supports the addition of comma delimited pauses and sending additional DTMF tones (using rfc2833). The first comma will pause three seconds after a call is first established with a remote device. Subsequent commas will pause for 2 seconds. A pause of one second will be sent after each numerical digit.

Table 2-11. Examples of Dial-Out Extension Strings

Extension String	Resulting Action
302	Dial out extension 302 and establish a call
302,2	Dial out extension 302 and establish a call, wait 3 seconds then send the DTMF tone '2'
302,25,,,4,,1	Dial out extension 302 and establish a call, wait 3 seconds then send the DTMF tone '2', send out DTMF tone 5, wait 6 seconds, send out DTMF tone 4, wait 4 seconds, send out DTMF tone 1

Note The maximum number of total characters in the dial-out field is 25.

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2.4.7 Configure the Nightringer Parameters

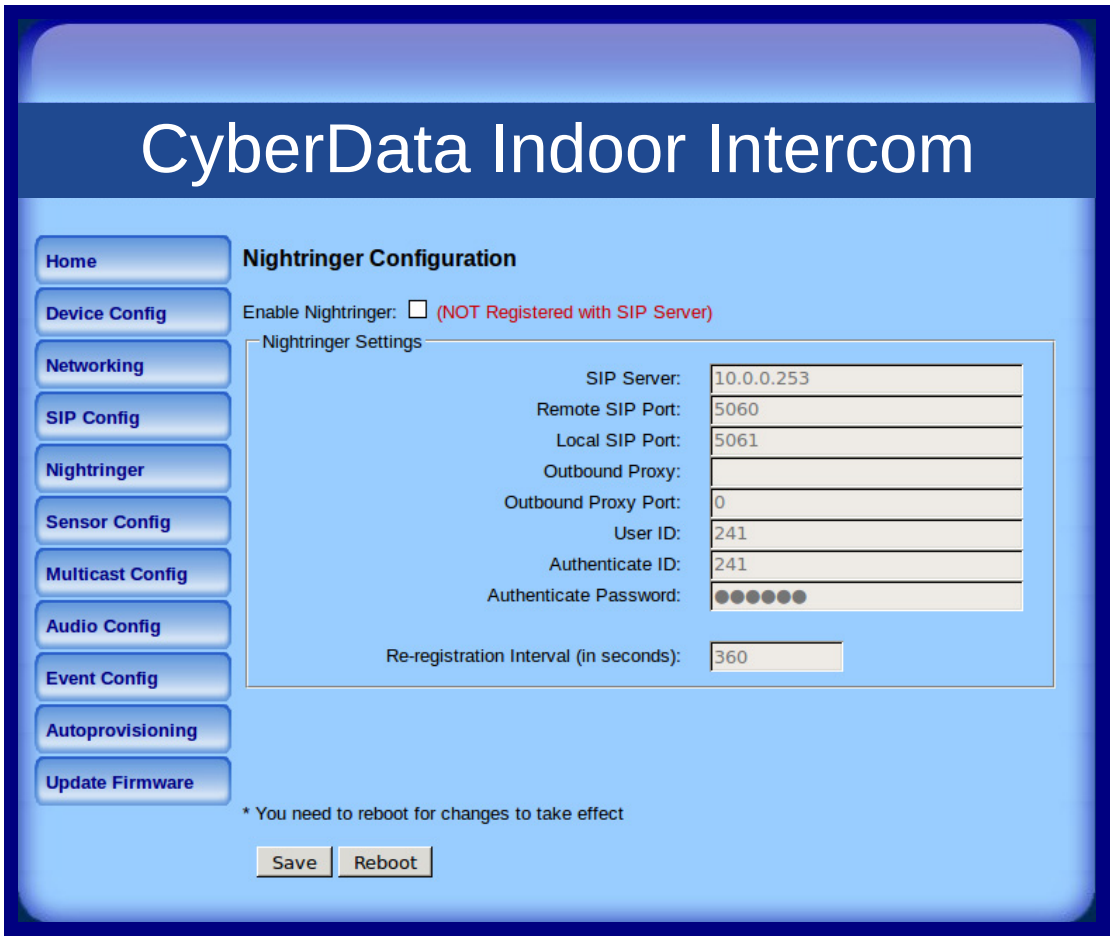
When the Nightringer is enabled, the Intercom will register as a second SIP extension. Registration does not have to be to the same server as the primary SIP registration. Any calls made to the Nightringer extension will cause the Intercom to play a ring tone. There is no way to answer this call. The Nightringer is designed to be used in buildings where calls made after hours are directed to a ring group.

Caution

Nightringer requires SIP Registration. Nightringer cannot be used in peer to peer mode.

1. Click on the **Nightringer** button to open the **Nightringer Configuration** page. See Figure 2-17.

Figure 2-17. Nightringer Configuration Setup



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2. On the **Nightringer Configuration** page, enter values for the parameters indicated in Table 2-12.

Table 2-12. Nightringer Configuration Parameters

Web Page Item	Description
Enable Nightringer	When the nightringer is enabled, the unit will attempt to register a second extension with the SIP server. Any calls made to this extension will play a ringtone.
Nightringer Settings	
SIP Server	Type the SIP server represented as either a numeric IP address in dotted decimal notation.
Remote SIP Port	Type the Remote SIP Port number (default 5060) (8 character limit).
Local SIP Port	Type the Local SIP Port number (default 5060) (8 character limit). **Note**: This value cannot be the same as the **Local SIP Port** found on the **SIP Configuration Page**.
Outbound Proxy	Type the Outbound Proxy as either a numeric IP address in dotted decimal notation or the fully qualified host name (255 character limit [FQDN]).
Outbound Proxy Port	Type the Outbound Proxy Port number (8 character limit).
User ID	Type the **User ID** (up to 64 alphanumeric characters).
Authenticate ID	Type the **Authenticate ID** (up to 64 alphanumeric characters).
Authenticate Password	Type the **Authenticate Password** (up to 64 alphanumeric characters).
Re-registration Interval (in seconds)	The SIP Registration lease time (in seconds).
Save	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
Reboot	Click on the **Reboot** button to reboot the system.

Note You must click on the **Save** button and then the **Reboot** button for the changes to take effect.

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2.4.8 Configure the Sensor Configuration Parameters

The door sensor (pins 5 and 6) on the header can be used to monitor a door's open or closed state. There is an option on the **Sensor Configuration** page to trigger on an open or short condition on these pins. The door sensor alarm will be activated when the **Door Open Timeout** parameter has been met.

The intrusion sensor is an optical sensor installed on the Intercom board and will be activated when the Intercom is removed from the case.

Each sensor can trigger up to five different actions:

- Flash the LED until the sensor is deactivated (roughly 10 times/second)
- Activate the relay until the sensor is deactivated
- Loop an audio file out of the Intercom speaker until the sensor is deactivated
- Call an extension and establish two way audio
- Call an extension and play a pre-recorded audio file

Note Calling a preset extension can be set up as a point-to-point call, but currently can't send delayed DTMF tones.

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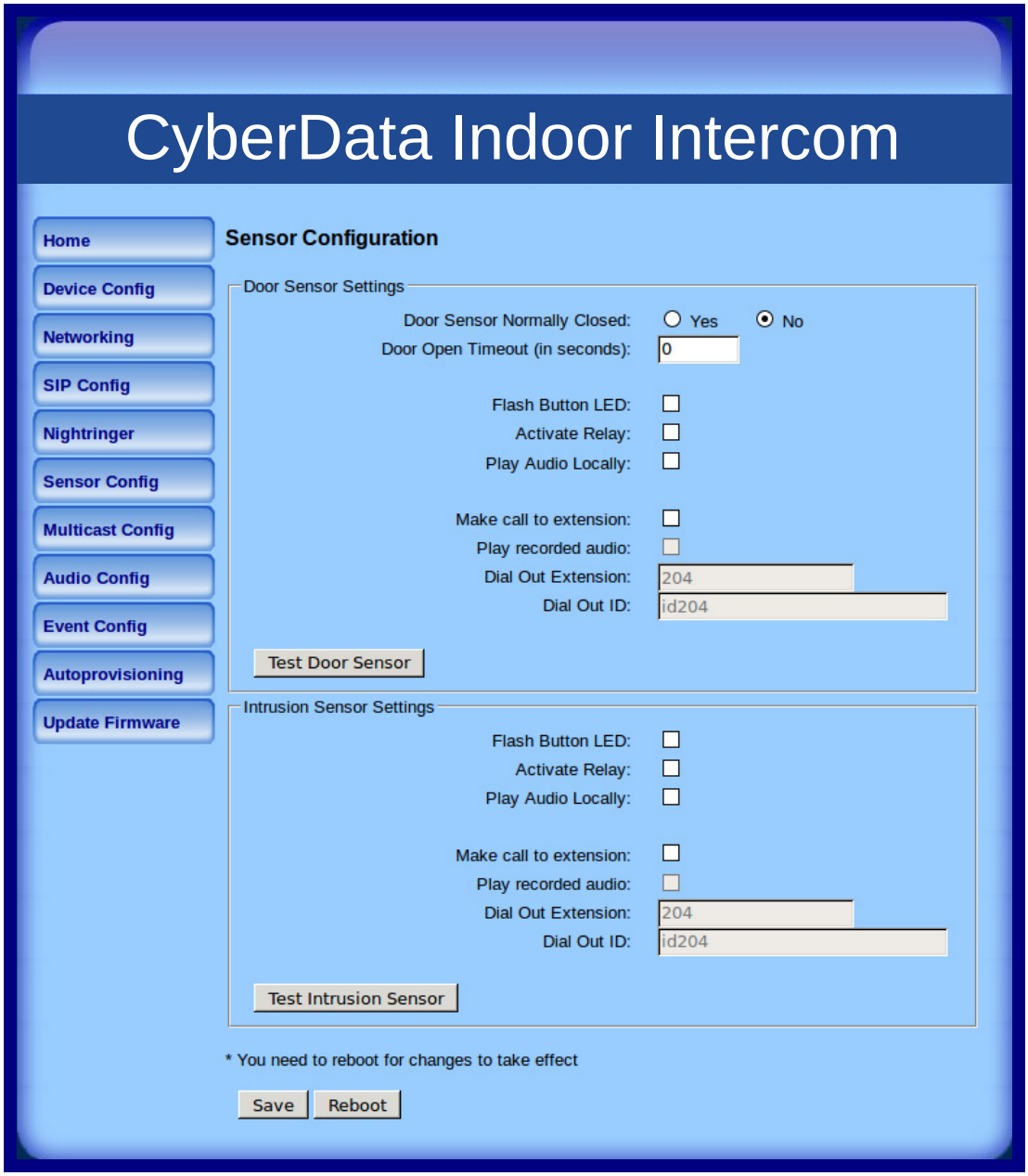
1. Click **Sensor Config** to open the **Sensor Configuration** page (Figure 2-18).

Figure 2-18. Sensor Configuration Page



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2. On the **Sensor Configuration** page, enter values for the parameters indicated in Table 2-13.

Table 2-13. Sensor Configuration Parameters

Web Page Item	Description
Door Sensor Settings	
Door Sensor Normally Closed	Select the inactive state of the door sensors.
Door Open Timeout (in seconds)	Select the number of seconds that you want to pass before the door sensor is activated.
Flash Button LED	Check this box to flash the LED until the sensor is deactivated (roughly 10 times/second).
Activate Relay	Check this box to activate the relay until the sensor is deactivated.
Play Audio Locally	Check this box to loop an audio file out of the Intercom speaker until the sensor is deactivated.
Make call to extension	Check this box to call a preset extension (once).
Play recorded audio	Check this box to play a pre-recorded audio file (once).
Dial Out Extension	Enter the desired dial-out extension number.
Dial Out ID	Type the desired Extension ID (64 character limit).
Test Door Sensor	Use this button to test the door sensor.
Intrusion Sensor Settings	
Flash Button LED	Check this box to flash the LED until the sensor is deactivated (roughly 10 times/second).
Activate Relay	Check this box to activate the relay until the sensor is deactivated.
Play Audio Locally	Check this box to loop an audio file out of the Intercom speaker until the sensor is deactivated.
Make call to extension	Check this box to call a preset extension (once).
Play recorded audio	Check this box to play a pre-recorded audio file (once).
Dial Out Extension	Enter the desired dial-out extension number.
Dial Out ID	Type the desired Extension ID (64 character limit).
Test Intrusion Sensor	Use this button to test the Intrusion sensor.
Save	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
Reboot	Click on the **Reboot** button to reboot the system.

Note You must click on the **Save** button and then the **Reboot** button for the changes to take effect.

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2.4.9 Configure the Multicast Parameters

The Multicast Configuration page allows the device to join up to ten paging zones for receiving ulaw/alaw encoded RTP audio streams.

A paging zone can consist of one or many CyberData multicast group-enabled products. There is no limit to how many speakers can be in a given paging zone. Each multicast group is defined by a multicast address and port number.

Each multicast group is assigned a priority, allowing simultaneously arriving pages to be serviced based on importance. Multicast groups are compatible with IGMP through version 3. The device supports simultaneous SIP and Multicast.

1. Click on the **Multicast Configuration** button to open the **Multicast Configuration** page. See Figure 2-19.

Figure 2-19. Multicast Configuration Page

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2. On the **Multicast Configuration** page, enter values for the parameters indicated in Table 2-14.

Table 2-14. Multicast Configuration Parameters

Web Page Item	Description
Enable Multicast Operation	Enables or disables multicast operation.
Device Settings	
Priority	Indicates the priority for the multicast group. Priority **9** is the highest (emergency streams). **0** is the lowest (background music). SIP calls are considered priority **4.5**. See Section 2.4.9.1, "Assigning Priority" for more details.
Address	Enter the multicast IP Address for this multicast group (15 character limit).
Port (range can be from 2000 to 65535)	Enter the port number for this multicast group (5 character limit). **Note**: The multicast ports have to be even values. The webpage will enforce this restriction.
Multicast Group Name	Assign a descriptive name for this multicast group (25 character limit).
Beep	When selected, the device will play a beep before multicast audio is sent.
Save	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
Reboot	Click on the **Reboot** button to reboot the system.

Note You must click on the **Save** button and then the **Reboot** button for the changes to take effect.

2.4.9.1 Assigning Priority

The device will prioritize simultaneous audio streams according to their priority in the list.

If both SIP and Multicast is enabled, SIP audio streams are considered priority **4.5**. SIP audio will interrupt multicast streams with priority **0** through **4** and will be interrupted by multicast streams with priority **5** through **9**.

During priority **9** multicast streams, the volume is set to maximum.

Note SIP calls, multicast streams, ring tones, ringback tones, and nightring tones are all prioritized.

Ringtones and Nightringtones

Ringtones all play at the same priority level. This means that it is possible to have a nightring tone and a normal ringtone playing at the same time.

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2.4.10 Configure the Audio Configuration Parameters

The **Audio Configuration** page is used to add custom audio to the board. User uploaded audio will take precedence over the audio files shipped with the Intercom.

1. Click **Audio Config** to open the **Audio Configuration** page (Figure 2-20).

Figure 2-20. Audio Configuration Page

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Figure 2-21. Audio Configuration Page (continued)

9: Currently set to default
New File: Browse... No file selected.
Play Delete Save
Dot: Currently set to default
New File: Browse... No file selected.
Play Delete Save
Audio test: Currently set to default
New File: Browse... No file selected.
Play Delete Save
Page tone: Currently set to pickup_test12345_8k2.wav
New File: Browse... No file selected.
Play Delete Save
Your IP Address is: Currently set to default
New File: Browse... No file selected.
Play Delete Save
Rebooting: Currently set to default
New File: Browse... No file selected.
Play Delete Save
Restoring Default: Currently set to default
New File: Browse... No file selected.
Play Delete Save
Ringback tone: Currently set to default
New File: Browse... No file selected.
Play Delete Save
Ring tone: Currently set to default
New File: Browse... No file selected.
Play Delete Save
Intrusion Sensor Triggered: Currently set to default
New File: Browse... No file selected.
Play Delete Save
Door Ajar: Currently set to default
New File: Browse... No file selected.
Play Delete Save
Night Ring: Currently set to default
New File: Browse... No file selected.
Play Delete Save

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2. On the **Audio Configuration** page, enter values for the parameters indicated in Table 2-15.

Table 2-15. Audio Configuration Parameters

Web Page Item	Description
Audio Files	
0-9	The name of the audio configuration option is the same as the spoken audio that plays on the board (24 character limit). '0' corresponds to the spoken word “zero.” '1' corresponds to the spoken word “one.” '2' corresponds to the spoken word “two.” '3' corresponds to the spoken word “three.” '4' corresponds to the spoken word “four.” '5' corresponds to the spoken word “five.” '6' corresponds to the spoken word “six.” '7' corresponds to the spoken word “seven.” '8' corresponds to the spoken word “eight.” '9' corresponds to the spoken word “nine.”
Dot	Corresponds to the spoken word “dot.” (24 character limit)
Audiotest	Corresponds to the message ***“This is the CyberData IP speaker test message...”*** (24 character limit)
Page tone	Corresponds to a simple tone used for beep on initialization and beep on page (24 character limit).
Your IP Address is	Corresponds to the message “Your IP address is...” (24 character limit).
Rebooting	Corresponds to the spoken word “Rebooting” (24 character limit).
Restoring default	Corresponds to the message “Restoring default” (24 character limit).
Ringback tone	This is the ringback tone that plays when calling a remote extension (24 character limit).
Ring tone	This is the tone that plays when set to ring when receiving a call (24 character limit).
Intrusion Sensor Triggered	Corresponds to the message “Intrusion Sensor Triggered” (24 character limit).
Door Ajar	Corresponds to the message “Door Ajar” (24 character limit).
Night Ring	Specifies the ringtone for nightring. By default this parameter uses the same audio file that is selected for the **Ring Tone** parameter.
Browse...	The **Browse** button will allow you to navigate to and select an audio file.
Play	The **Play** button will play that audio file.
Delete	The **Delete** button will delete any user uploaded audio and restore the stock audio file.
Save	The **Save** button will download a new user audio file to the board once you've selected the file by using the **Browse** button. The **Save** button will delete any pre-existing user-uploaded audio files.

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2.4.10.1 User-created Audio Files

User created audio files should be saved in the following format:

RIFF (little-endian) data, WAVE audio, Microsoft PCM, 16 bit, mono 8000 Hz

You can use the free utility *Audacity* to convert audio files into this format. See Figure 2-22 through Figure 2-24.

Figure 2-22. Audacity 1

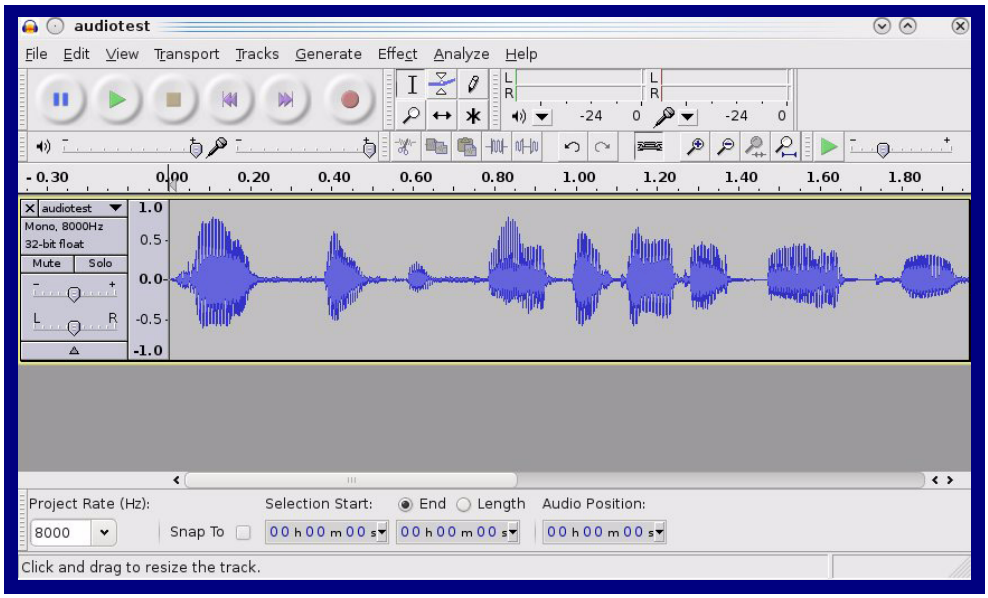
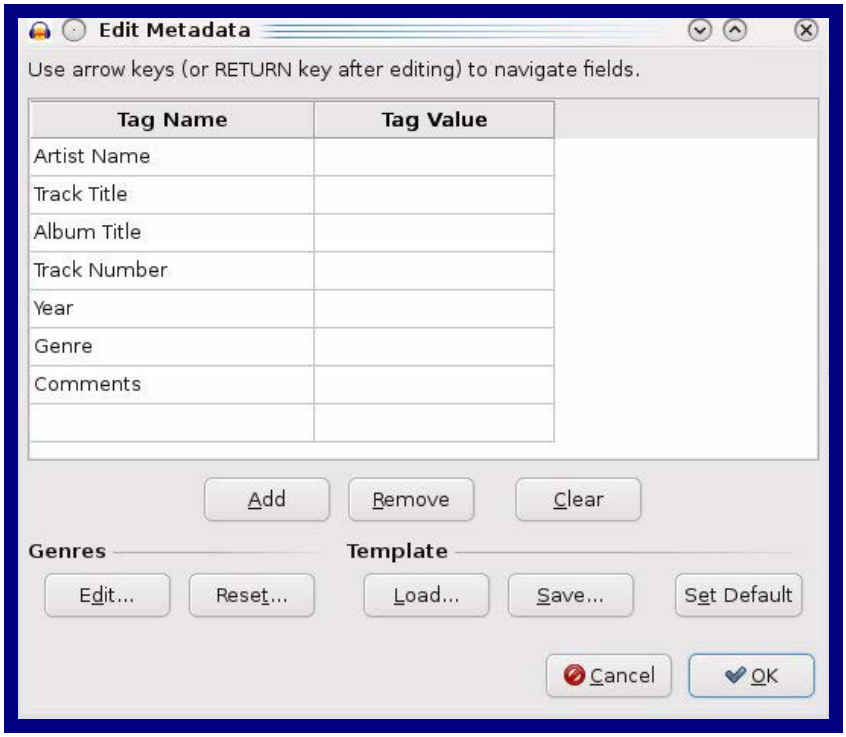


Figure 2-23. Audacity 2



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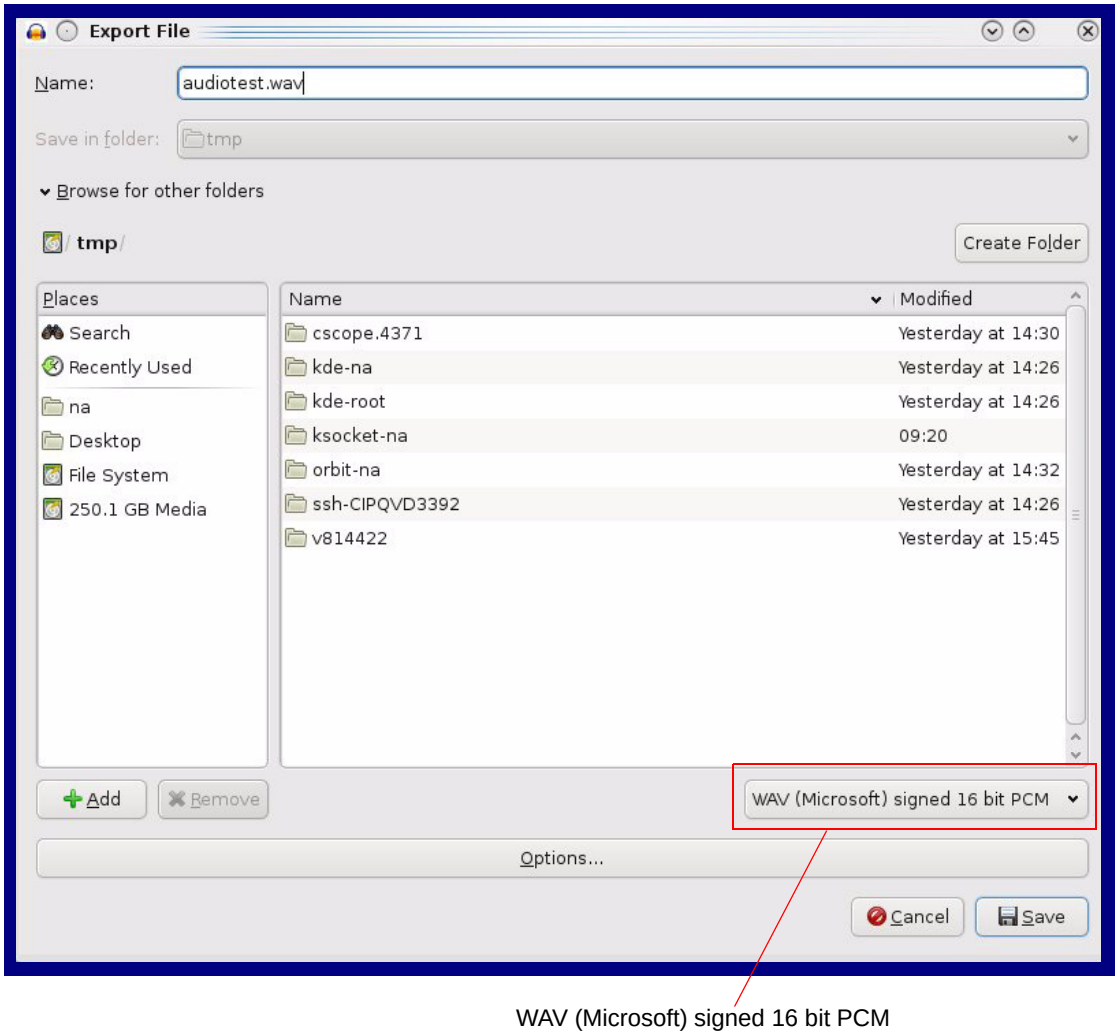
When you export an audio file with Audacity, save the output as:

- **WAV (Microsoft) signed 16 bit PCM**.

Figure 2-24. WAV (Microsoft) signed 16 bit PCM



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2.4.11 Configure the Event Parameters

Click the **Event Config** button to open the **Event Configuration** page (Figure 2-25). The **Event Configuration** page specifies a remote server that can be used to receive HTTP POST events when actions take place on the board.

Figure 2-25. Event Configuration Page

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Table 2-16 shows the web page items on the **Event Configuration** page.

Table 2-16. Event Configuration

Web Page Item	Description
Enable Event Generation	When selected, Event Generation is enabled.
Remote Event Server	
Remote Event Server IP	Type the Remote Event Server IP address. (64 character limit)
Remote Event Server Port	Type the Remote Event Server port number. (8 character limit)
Remote Event Server URL	Type the Remote Event Server URL. (127 character limit)
Events	
Enable Button Events	When selected, Button Events are enabled.
Enable Call Active Events	When selected, Call Active Events are enabled.
Enable Call Terminated Events	When selected, Call Terminated Events are enabled.
Enable Relay Activated Events	When selected, Relay Activated Events are enabled.
Enable Relay Deactivated Events	When selected, Relay Deactivated Events are enabled.
Enable Ring Events	When selected, Ring Events are enabled.
Enable Night Ring Events	When selected, there is a notification when the unit receives a night ring.
Enable Multicast Start Events	When selected, Multicast Start Events are enabled.
Enable Multicast Stop Events	When selected, Multicast Stop Events are enabled.
Enable Power On Events	When selected, Power On Events are enabled.
Enable Sensor Events	When selected, Sensor Events are enabled.
Enable Security Events	When selected, Security Events are enabled.
Enable 60 Second Heartbeat Events	When selected, 60 Second Heartbeat Events are enabled.
Save	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
Test Event	Click on the **Test Event** button to test an event.
Reboot	Click on the **Reboot** button to reboot the system.

Note You must click on the **Save** button and then the **Reboot** button for the changes to take effect.

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2.4.11.1 Example Packets for Events

The server and port are used to point to the listening server and the 'Remote Event Server URL' is the destination URL (typically the script running on the remote server that's used to parse and process the POST events).

Note The XML is URL-encoded before transmission so the following examples are not completely accurate.

Here are example packets for every event:

```
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 197
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>POWERON</event>
</cyberdata>


POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 199
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>HEARTBEAT</event>
</cyberdata>


POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 196
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>BUTTON</event>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 201
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>CALL_ACTIVE</event>
</cyberdata>
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
```


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```
User-Agent: CyberData/1.0.0
Content-Length: 205
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>CALL_TERMINATED</event>
</cyberdata>


POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 197
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>RINGING</event>
</cyberdata>


POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 234
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>MULTICAST_START</event>
<index>8</index>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 233
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>MULTICAST_STOP</event>
<index>8</index>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 234
Content-Type: application/x-www-form-urlencoded
<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>RELAY_ACTIVATED</event>
</cyberdata>
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
```


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```
User-Agent: CyberData/1.0.0
Content-Length: 234
Content-Type: application/x-www-form-urlencoded
<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>RELAY_DEACTIVATED</event>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 234
Content-Type: application/x-www-form-urlencoded
<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>NIGHTRINGING</event>
</cyberdata>
```


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2.4.12 Configure the Autoprovisioning Parameters

Autoprovisioning can be used to configure your device automatically on boot, after a periodic delay, after sitting idle for a period of time, or at a specified time.

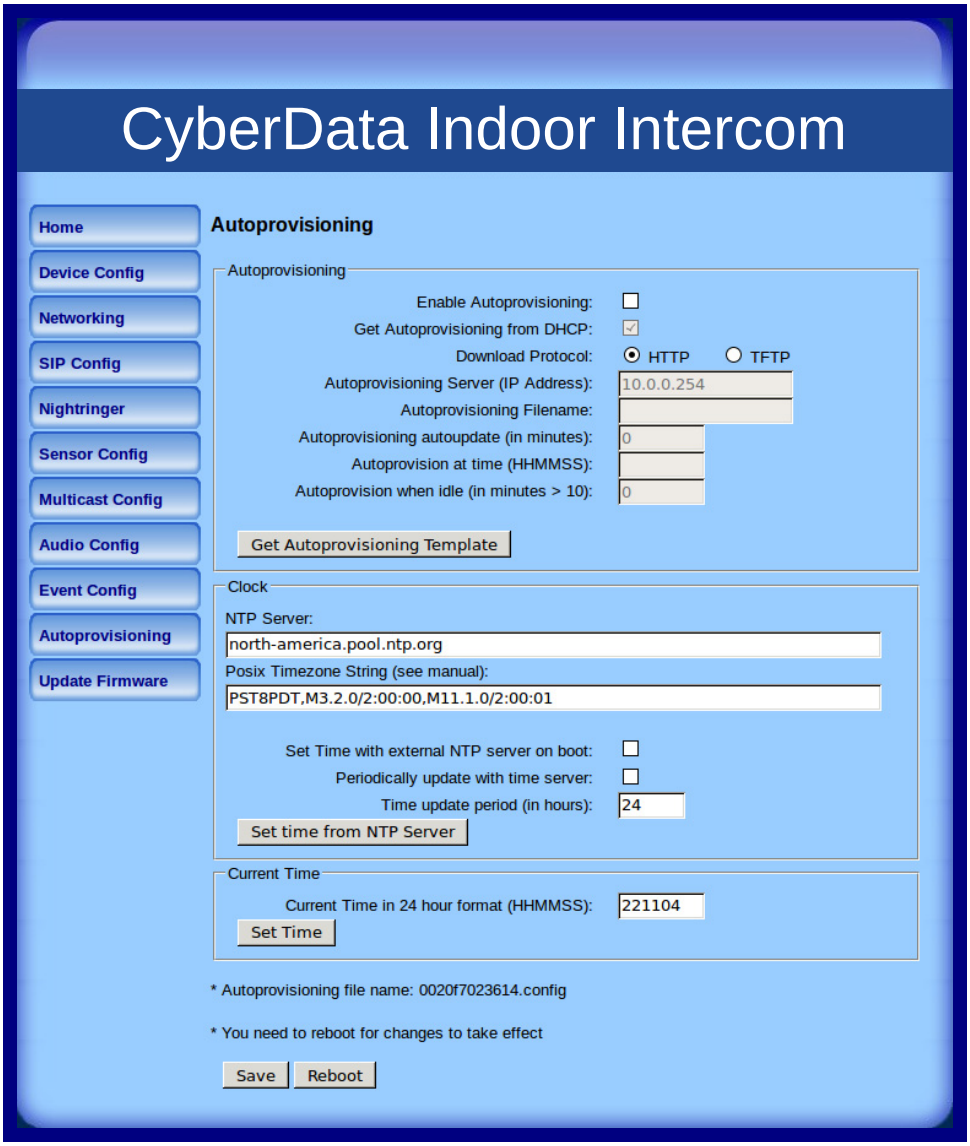
The autoprovisioning file contains the board configuration in xml format. Autoprovisioned values in this file will override values stored in on-board memory.

The autoprovisioning file can be hosted with a tftp or a web server and by default is named according to the MAC address of the device (for example: 0020f7350058.config). The autoprovisioning filename can also be specified.

The device does not have a real time clock but can sync with a network time server on boot.

1. Click the **Autoprovisioning** button to open the **Autoprovisioning Configuration** page. See Figure 2-26.

Figure 2-26. Autoprovisioning Configuration Page



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2. On the **Autoprovisioning Configuration** page, you may enter values for the parameters indicated in Table 2-17.

Table 2-17. Autoprovisioning Configuration Parameters

Web Page Item	Description
Autoprovisioning	
Enable Autoprovisioning	See Section 2.4.12.1, "Autoprovisioning".
Get Autoprovisioning from DHCP	See Section 2.4.12.1, "Autoprovisioning".
Download Protocol	Allows you to select whether the autoprovisioning file is acquired via **TFTP** or **HTTP**.
Autoprovisioning Server (IP Address)	See Section 2.4.12.1, "Autoprovisioning" (15 character limit).
Autoprovisioning Filename	Type the desired name for the autoprovisioning file.
Autoprovisioning Autoupdate (in minutes)	Type the desired time (in minutes) that you want the Autoprovisioning feature to update (6 character limit). **Note**: A value of **0** will disable this option.
Autoprovision at time (HHMMSS)	Type the desired time of day that you want the Autoprovisioning feature to update (must be 6 characters). **Note**: An empty value will disable this option.
Autoprovision when idle (in minutes > 10)	Type the desired time (in minutes greater than 10) that you want the Autoprovisioning feature to update after a certain amount of idle time (6 character limit). **Note**: A value of **0** will disable this option.
Get Autoprovisioning Template	Press the **Get Autoprovisioning Template** button to create an autoprovisioning file for this unit. See Section 2.4.12.2, "Get Autoprovisioning Template Button"
Clock	
NTP Server	Allows you to select the NTP server (64 character limit).
Posix Timezone String	See Section 2.4.12.3, "Time Zone Strings" (43 character limit).
Set Time with External NTP Server on boot	When selected, the time is set with an external NTP server when the device restarts.
Periodically update with time server	When selected, the time is periodically updated with a time server.
Time update period (in hours)	Allows you to select the time updated period (in hours) (4 character limit).
Set time from NTP Server	Allows you to set the time from the NTP server.
Current Time	
Current Time in 24 hour format (**HHMMSS**)	Allows you to input the current time in the 24 hour format. (6 character limit)
Set Time	Click on this button to set the clock after entering the current time.
Save	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
Reboot	Click on the **Reboot** button to reboot the system.

3. After changing the parameters, click the **Save** button.

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2.4.12.1 Autoprovisioning

Autoprovisioning File

It is not necessary to set every option found in the autoprovisioning template. As long as the XML is valid, the file can contain any subset. Options not autoprovisioned will default to the values stored in the on board memory. For example if you only wanted to modify the device name, the following would be a valid autoprovisioning file:

```
<?xml version="1.0" encoding="utf-8" ?>
<specific>
    <MiscSettings>
        <DeviceName>auto Intercom</DeviceName>
    </MiscSettings>

</specific>
```

Get Autoprovisioning from DHCP

When this option is checked, the device will automatically fetch its autoprovisioning server address from the DHCP server. The device will use the address specified in **OPTION 150** (TFTP-server-name) or **OPTION 66**. If both options are set, the device will use **OPTION 150**.

Refer to the documentation of your DHCP server for setting up **OPTION 150**.

To set up a Linux DHCPD server to serve autoprovisioning information (in this case using both option 66 and 150), here's an example dhcpd.conf:

```
# dhcpd.conf
#
# Configuration file for ISC dhcpd (see 'man dhcpd.conf')
#
ddns-update-style ad-hoc;

option option-150 code 150 = ip-address;

subnet 10.0.0.0 netmask 255.0.0.0 {
        max-lease-time 120;
        default-lease-time 120;

        option routers                  10.0.0.1;
        option subnet-mask              255.0.0.0;

        option domain-name              "voiplab";
        option domain-name-servers       10.0.0.1;

        option time-offset              -8;     # Pacific Standard Time

        option tftp-server-name         "10.0.0.254";

        option option-150               10.0.0.254;

        range 10.10.0.1 10.10.2.1;}
```

Autoprovisioning Server (IP Address)

Instead of using DHCP to provide the autoprovisioning tftp server address, you can specify an address manually.

Autoprovisioning Autoupdate

When the device is set to autoprovision either after a period of time, or when idle, or at a time of day, the device will do the following:

- Re-download the autoprovisioning file.
- Compare this new file to the one downloaded on boot, and if it finds differences, force a system reset.

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- After rebooting, the board will configure itself according to this new file.

Autoprovisioned Firmware Upgrades

An Autoprovisioned firmware upgrade only happens after a reboot, will take roughly three minutes, and the web page will be unresponsive during this time.

The '**FirmwareVersion'** value in the xml file *must* match the version stored in the '**FirmwareFile**'.

```
<FirmwareVersion>v10.1.3</FirmwareVersion>
<FirmwareFile>1013-intercom-uImage</FirmwareFile>
```

If these values are mismatched, the board can get stuck in a loop where it goes through the following sequence of actions:

1. The board downloads and writes a new firmware file.
2. After the next reboot, the board recognizes that the firmware version does not match.
3. The board downloads and writes the firmware file again.

CyberData has timed a firmware upgrade at 140 seconds. Therefore, if you suspect the board is stuck in a loop, either remove or comment out the **FirmwareVersion** line in the XML file and let the board boot as it normally does.

Autoprovisioned Audio Files

Audio files are stored in non-volatile memory and an autoprovisioned audio file will only have to be downloaded once for each device. Loading many audio files to the device from the web page could cause it to appear unresponsive. If this happens, wait until the transfer is complete and then refresh the page.

The device uses the file name to determine when to download a new audio file. This means that if you used autoprovisioning to upload a file and then changed the contents of this file at the TFTP server, the device will not recognize that the file has changed (because the file name is the same).

Since audio files are stored in non-volatile memory, if autoprovisioning is disabled after they have been loaded to the board, the audio file settings will not change. You can force a change to the audio files on the board by clicking **Restore Default** on the **Audio Configuration** page or by changing the autoprovisioning file with “**default**” set as the file name.

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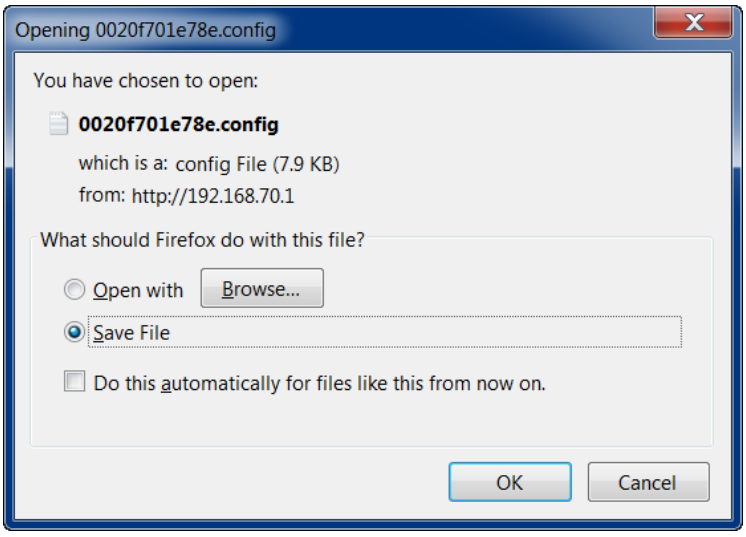
2.4.12.2 Get Autoprovisioning Template Button

The **Get Autoprovisioning Template** button allows the user to generate, download, edit, and then store an autoprovisioning template on the server that serves the autoprovisioning files for devices.

To generate an autoprovisioning template directly from the device, complete the following steps:

1. On the **Autoprovisioning** page, click on the **Get Autoprovisioning Template** button.
2. You will see a window prompting you to save a configuration file (**.config**) to a location on your computer (Figure 2-27). The configuration file is the basis for the default configuration settings for your unit).
3. Choose a location to save the configuration file and click on **OK**. See Figure 2-27.

Figure 2-27. Configuration File



4. At this point, you can open and edit the autoprovisioning template to change the configuration settings in the template for the unit.
5. You can then upload the autoprovisioning file to a TFTP or HTTP server where the file can be loaded onto other devices.

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2.4.12.3 Time Zone Strings

The posix time zone string tells the internal date and time utilities how to handle daylight savings time for different time zones. Table 2-18 shows some common strings.

Table 2-18. Common Time Zone Strings

Time Zone	Time Zone String
US Pacific time	PST8PDT,M3.2.0/2:00:00,M11.1.0/2:00:00
US Mountain time	MST7MDT,M3.2.0/2:00:00,M11.1.0/2:00:00
US Eastern Time	EST5EDT,M3.2.0/2:00:00,M11.1.0/2:00:00
Phoenix Arizona[a]	MST7
US Central Time	CST6DST,M3.2.0/2:00:00,M11.1.0/2:00:00

a.Phoenix, Arizona does not use daylight savings time.

Table 2-19 shows a breakdown of the parts that constitute the following time zone string:

- ***CST6DST,M3.2.0/2:00:00,M11.1.0/2:00:00***

Table 2-19. Time Zone String Parts

Time Zone String Part	Meaning
CST6CDT	The time zone offset from GMT and three character identifiers for the time zone.
CST	Central Standard Time
6	The (hour) offset from GMT/UTC
CDT	Central Daylight Time
M3.2.0/2:00:00	The date and time when daylight savings begins.
M3	The third month (March)
.2	The 2nd occurrence of the day (next item) in the month
.0	Sunday
/2:00:00	Time of day to change
M11.1.0/2:00:00	The date and time when daylight savings ends.
M11	The eleventh month (November)
.1	The 1st occurrence of the day (next item) in the month
.0	Sunday
/2:00:00	Time of day to change

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Time Zone String Examples

Table 2-20 has some more examples of time zone strings.

Table 2-20. Time Zone String Examples

Time Zone	Time Zone String
Tokyo[a]	IST-9
Berlin[b]	CET-1MET,M3.5.0/1:00,M10.5.0/1:00

a.Tokyo does not use daylight savings time.
b.For Berlin, daylight savings time starts on the last Sunday in March at 01:00 UTC, and ends on the last Sunday in October at 01:00 UTC, and is one hour ahead of UTC.

Time Zone Identifier

A user-definable three or four character time zone identifier (such as PST, EDT, IST, MUT, etc) is needed at the beginning of the posix time zone string to properly set the time. However, the specific letters or numbers used for the time zone identifier are not important and can be any three or four letter or number combination that is chosen by the user. However, the time zone identifier cannot be blank.

Figure 2-28. Three or Four Character Time Zone Identifier

You can also use the following URL when a certain time zone applies daylight savings time:

http://www.timeanddate.com/time/dst/2011.html

World GMT Table

Table 2-21 has information about the GMT time in various time zones.

Table 2-21. World GMT Table

Time Zone	City or Area Zone Crosses
GMT-12	Eniwetok
GMT-11	Samoa
GMT-10	Hawaii
GMT-9	Alaska
GMT-8	PST, Pacific US
GMT-7	MST, Mountain US
GMT-6	CST, Central US
GMT-5	EST, Eastern US
GMT-4	Atlantic, Canada
GMT-3	Brazilia, Buenos Aries
GMT-2	Mid-Atlantic
GMT-1	Cape Verdes
GMT	Greenwich Mean Time, Dublin
GMT+1	Berlin, Rome
GMT+2	Israel, Cairo
GMT+3	Moscow, Kuwait
GMT+4	Abu Dhabi, Muscat

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Table 2-21. World GMT Table (continued)

Time Zone	City or Area Zone Crosses
GMT+5	Islamabad, Karachi
GMT+6	Almaty, Dhaka
GMT+7	Bangkok, Jakarta
GMT+8	Hong Kong, Beijing
GMT+9	Tokyo, Osaka
GMT+10	Sydney, Melbourne, Guam
GMT+11	Magadan, Soloman Is.
GMT+12	Fiji, Wellington, Auckland

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2.5 Upgrade the Firmware and Reboot the Intercom

Caution

Equipment Hazard: Devices with a serial number that begins with 2091xxxxx can only run firmware versions 10.0.0 or later.

2.5.1 Uploading the Firmware

To upload the firmware from your computer:

1. Retrieve the latest Intercom firmware file from the VoIP Indoor Intercom **Downloads** page at:
   http://www.cyberdata.net/products/voip/digitalanalog/singlewireindoorintercom/downloads.html
2. Unzip the firmware version file. This file may contain the following:

- Firmware file
- Release notes

3. Log in to the Intercom home page as instructed in Section 2.4.3, "Log in to the Configuration Home Page".
4. Click the **Update Firmware** button to open the **Upgrade Firmware** page. See Figure 2-29.

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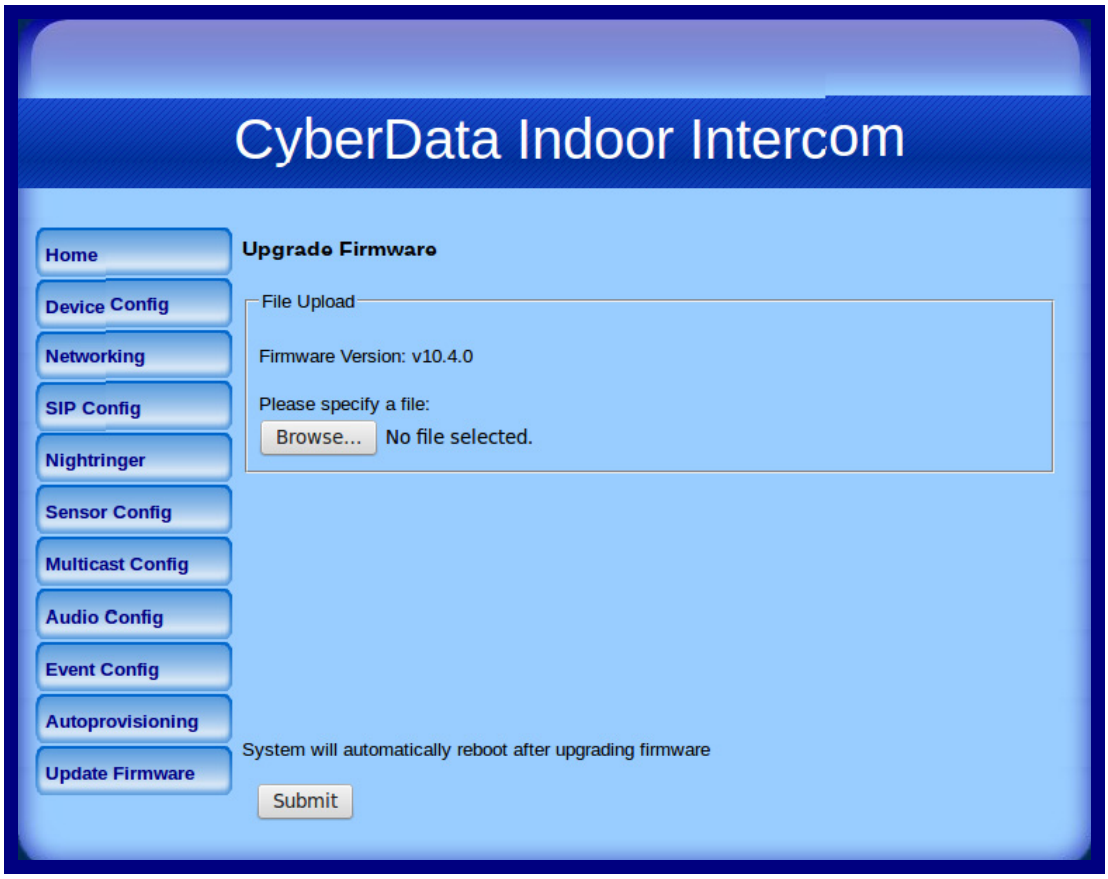
Figure 2-29. Upgrade Firmware Page



5. Select **Browse**, and then navigate to the location of the Intercom firmware file.
6. Click **Submit**.

Note Do not reboot the board after pressing the **Submit** button.

Note This starts the upgrade process. Once the Intercom has uploaded the file, the **Uploading Firmware** countdown page appears, indicating that the firmware is being written to flash. The Intercom will automatically reboot when the upload is complete. When the countdown finishes, the **Upgrade Firmware** page will refresh. The uploaded firmware filename should be displayed in the system configuration (indicating successful upload and reboot).

Table 2-22 shows the web page items on the **Upgrade Firmware** page.

Table 2-22. Firmware Upgrade Parameters

Web Page Item	Description
File Upload	
Firmware Version	Shows the current firmware version.
Browse...	Use the **Browse** button to navigate to the location of the Intercom firmware file that you want to upload.
Submit	Click on the **Submit** button to automatically upload the selected firmware and reboot the system.

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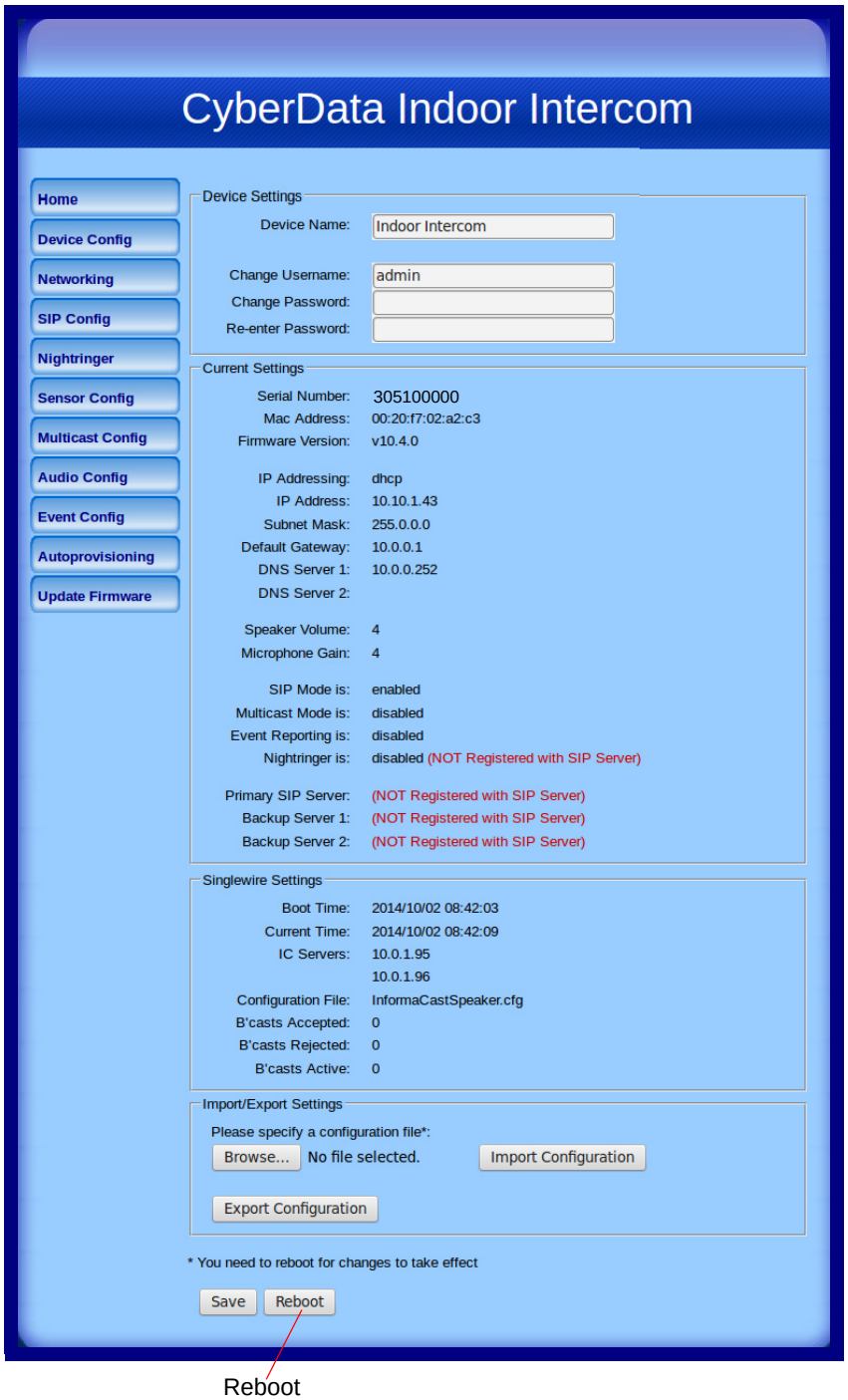
2.5.2 Reboot the Intercom

To reboot a Intercom, log in to the web page as instructed in Section 2.4.3, "Log in to the Configuration Home Page".

1. Click **Reboot** (Figure 2-30). A normal restart will occur.

Figure 2-30. Reboot System Section



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2.6 Command Interface

Some functions on the device can be activated using simple POST commands to the web interface. The examples in Table 2-23 use the free unix utility, **wget commands**. However, any program that can send HTTP POST commands to the device should work.

2.6.1 Command Interface Post Commands

Note These commands require an authenticated session (a valid username and password to work).

Table 2-23. Command Interface Post Commands

Device Action	HTTP Post Command[a]
Trigger relay (for configured delay)	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/command.cgi" --post-data "test_relay=yes"
Place call to extension (example: extension 130)	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/command.cgi" --post-data "call=130"
Place point-to-point call[b] (example: IP phone address = 10.0.3.72)	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/command.cgi" --post-data "call=10.0.3.72"
Terminate active call	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/command.cgi" --post-data "terminate=yes"
Force reboot	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/command.cgi" --post-data "reboot=yes"
Test Audio button	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/command.cgi" --post-data "test_audio=yes"
Announce IP address	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/command.cgi" --post-data "speak_ip_address=yes"
Play the "0" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_0=yes"
Play the "1" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_1=yes"
Play the "2" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_2=yes"
Play the "3" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_3=yes"

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Table 2-23. Command Interface Post Commands (continued)

Device Action	HTTP Post Command[a]
Play the "4" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_4=yes"
Play the "5" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_5=yes"
Play the "6" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_6=yes"
Play the "7" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_7=yes"
Play the "8" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_8=yes"
Play the "9" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_9=yes"
Play the "Dot" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_d=yes"
Play the "Audio Test" audio file (from Audio Config)	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_audiotest=yes"
Play the "Page Tone" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_pagetone=yes"
Play the "Your IP Address Is" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_youripaddressis=yes"
Play the "Rebooting" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_rebooting=yes"
Play the "Restoring Default" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_restoringdefault=yes"
Play the "Ringback tone" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_ringback=yes"
Play the "Ring tone" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_ringtone=yes"
Play the "Intrusion Sensor Triggered" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_intrusionsensortriggered=yes"
Play the "Door Ajar" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_doorajar=yes"

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Table 2-23. Command Interface Post Commands (continued)

Device Action	HTTP Post Command[a]
Play the "Night Ring" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "play_nightring=yes"
Delete the "0" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_0=yes"
Delete the "1" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_1=yes"
Delete the "2" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_2=yes"
Delete the "3" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_3=yes"
Delete the "4" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_4=yes"
Delete the "5" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_5=yes"
Delete the "6" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_6=yes"
Delete the "7" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_7=yes"
Delete the "8" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_8=yes"
Delete the "9" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_9=yes"
Delete the "Audio Test" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_audiotest=yes"
Delete the "Page Tone" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_pagetone=yes"
Delete the "Your IP Address Is" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_youripaddressis=yes"
Delete the "Rebooting" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_rebooting=yes"
Delete the "Restoring Default" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_restoringdefault=yes"

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Table 2-23. Command Interface Post Commands (continued)

Device Action	HTTP Post Command[a]
Delete the "Ringback tone" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_ringback=yes"
Delete the "Ring tone" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_ringtone=yes"
Delete the "Intrusion Sensor Triggered" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_intrusionsensortriggered=yes"
Delete the "Door Ajar" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_doorajar=yes"
Delete the "Night Ring" audio file	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/audioconfig.cgi" --post-data "delete_nightring=yes"
Trigger the Door Sensor Test (Sensor Config page)	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/sensorconfig.cgi" --post-data "doortest=yes"
Trigger the Intrusion Sensor Test (Sensor Config page)	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null "http://10.0.3.71/cgi-bin/sensorconfig.cgi" --post-data "intrusiontest=yes"

a.Type and enter all of each http POST command on one line.
b. Must be in point-to-point mode see Section 2.4.6.2, "Point-to-Point Configuration"

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Appendix A: Mounting the Indoor Intercom

A.1 Wall Mounting Components

Before you mount the Intercom, make sure that you have received all the parts for each Intercom. Refer to the following tables.

Table A-1. Wall Mounting Components (Part of the Accessory Kit)

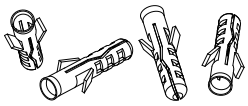
Quantity	Part Name	Illustration
4	Sheet Metal Screw	
4	Plastic Ribbed Anchor	

Table A-2. Gang Box Mounting Components

Quantity	Part Name	Illustration
4	#6-32 FlatHead Countersunk Machine Screw	

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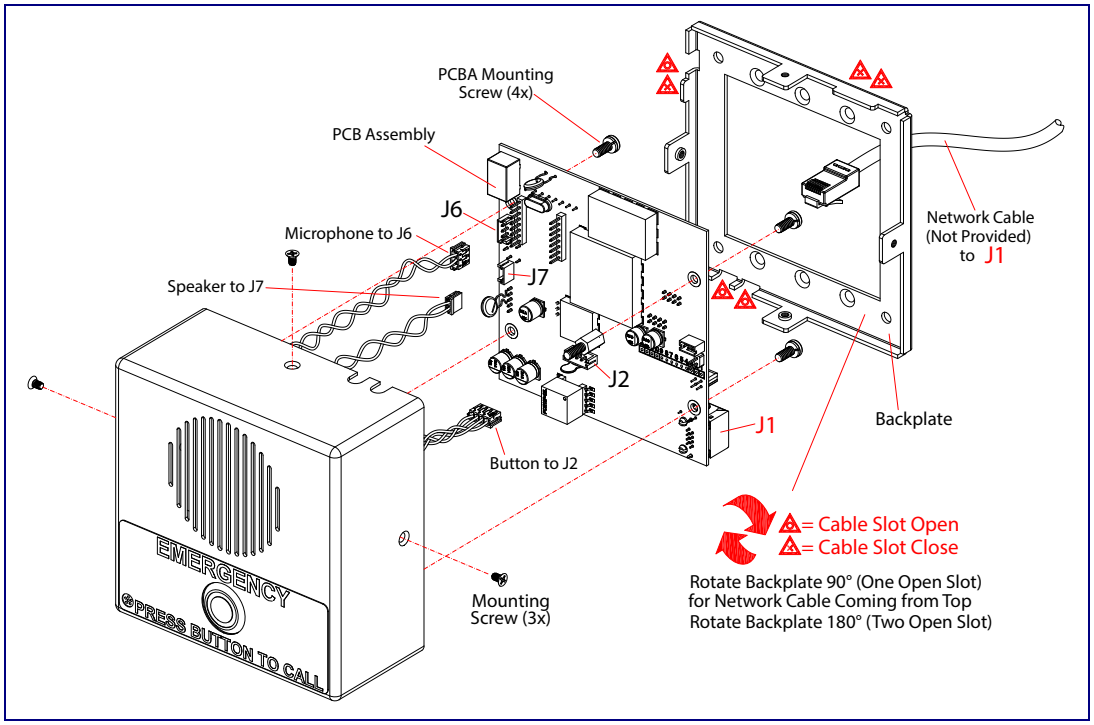
A.2 Cable Connections

Figure A-1 shows how to properly connect the VoIP Intercom.

Figure A-1. Cable Connections



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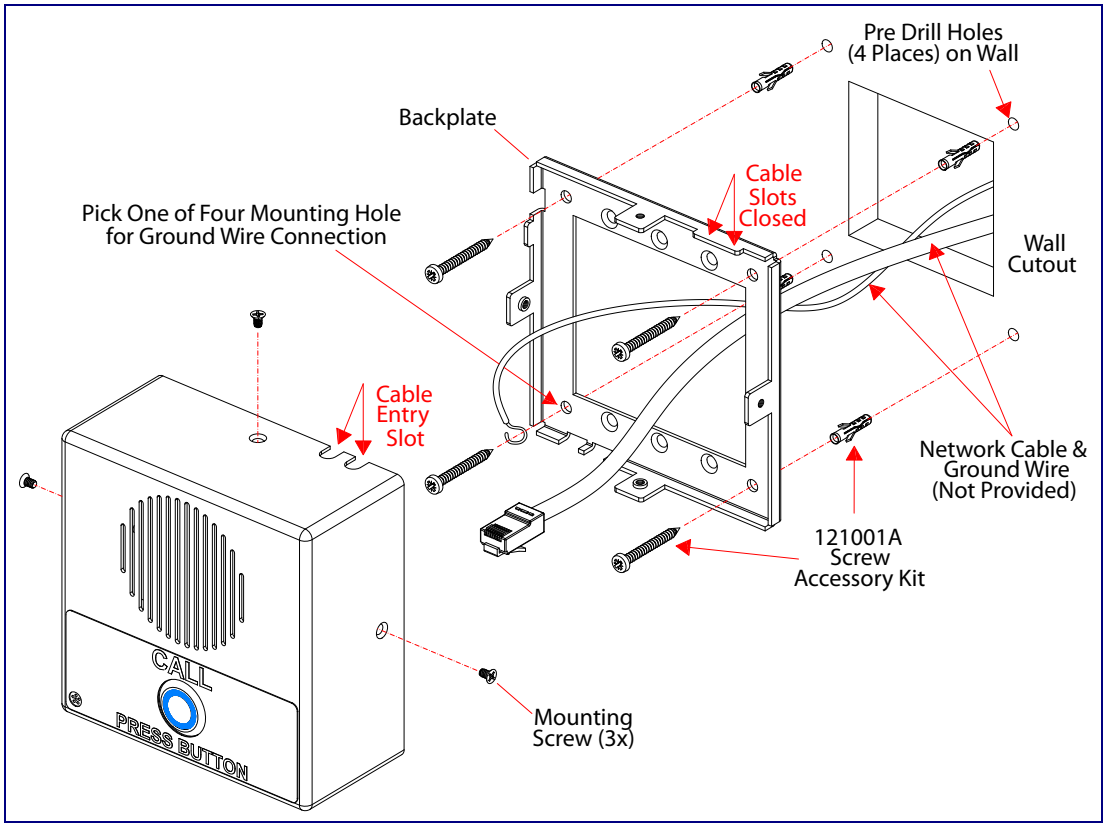
A.3 Wall Mounting Option

Figure A-2 shows a wall mounting option.

Note Be sure to connect the VoIP Indoor Intercom to the Earth Ground.

Figure A-2. Wall Mounting Option



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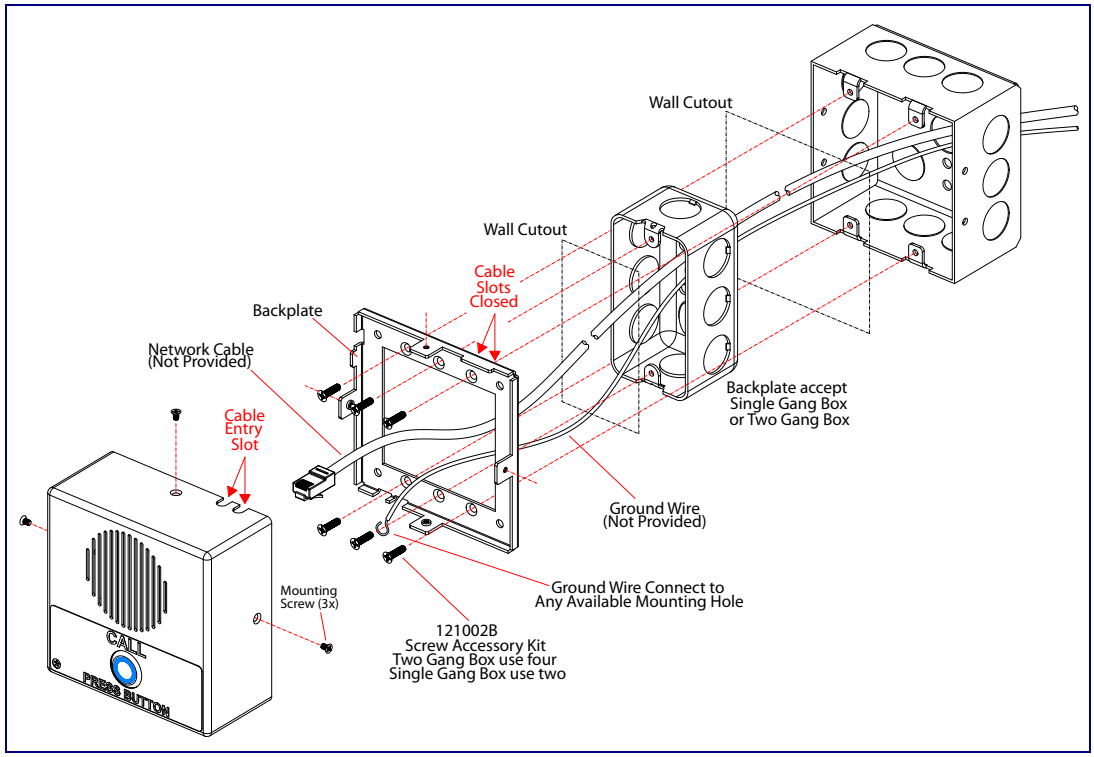
A.4 Gang Box Option

Figure A-3 shows a 1-Gang Box and a 2-Gang Box mounting option.

Note Be sure to connect the VoIP Indoor Intercom to the Earth Ground.

Figure A-3. Gang Box Mounting



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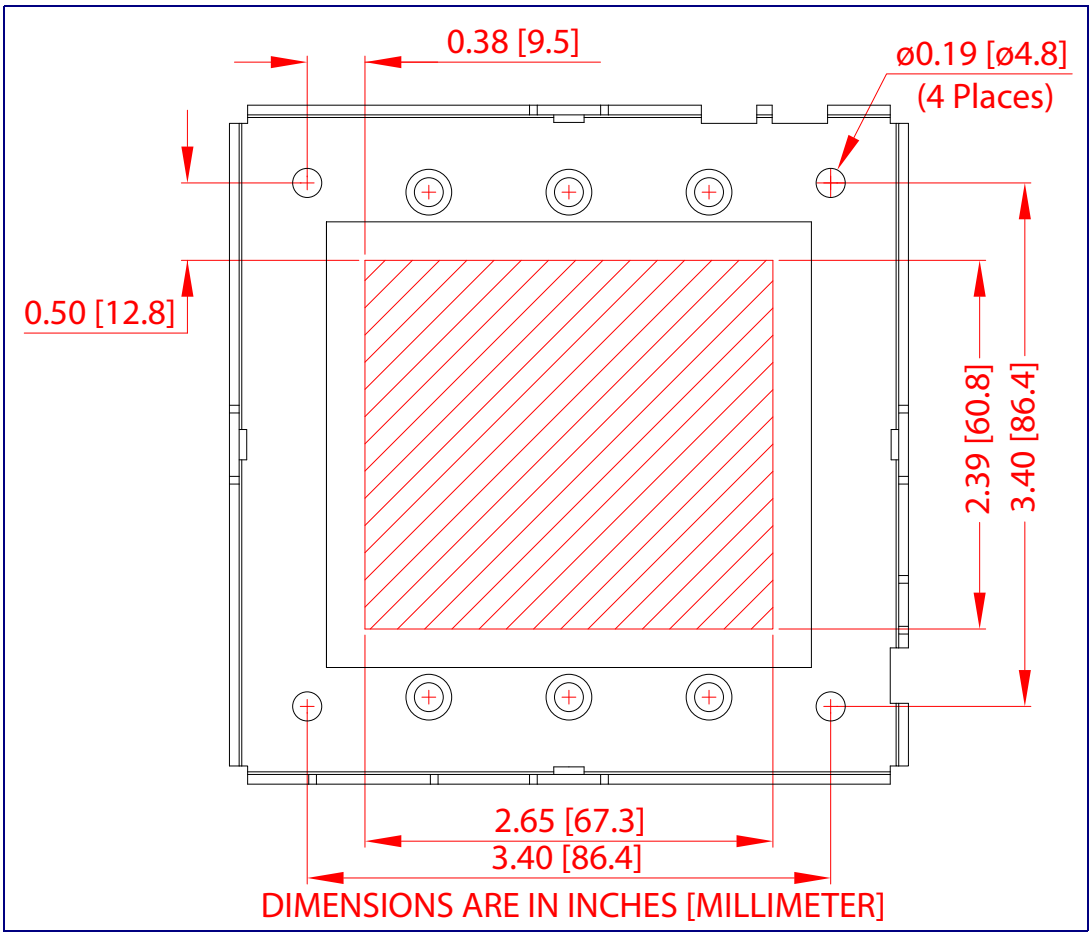
A.5 Wall Cutout Dimensions

Figure A-4 shows the maximum recommended wall cutout dimensions.

Figure A-4. Maximum Recommended Wall Cutout Dimensions



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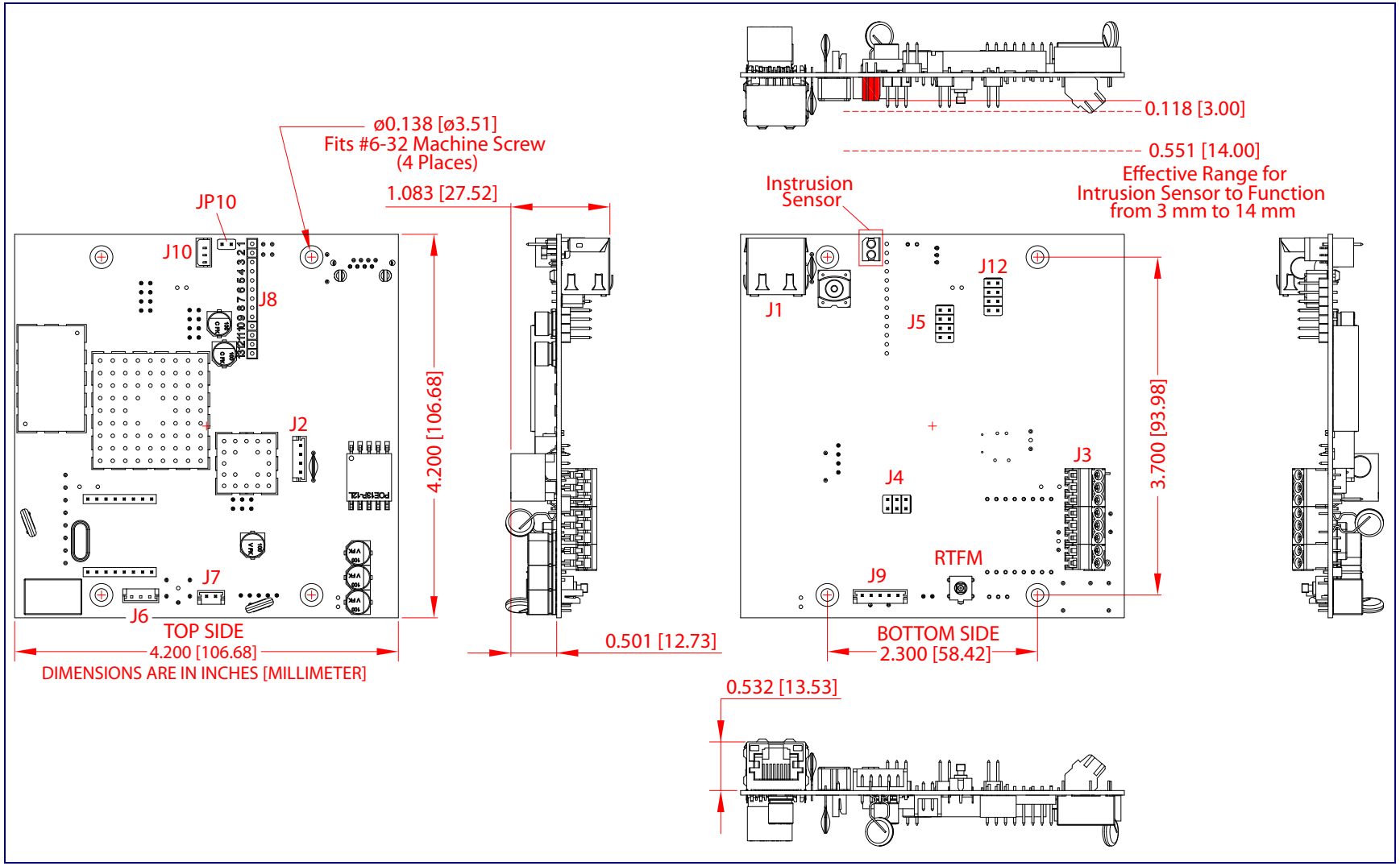
A.6 PCB Dimensions

Figure A-5 shows the PCB dimensions and the intrusion sensor range.

Figure A-5. PCB Dimensions and Intrusion Sensor Range



Appendix B: Setting up a TFTP Server

B.1 Set up a TFTP Server

Autoprovisioning requires a TFTP server for hosting the configuration file.

B.1.1 In a LINUX Environment

To set up a TFTP server on LINUX:

1. Create a directory dedicated to the TFTP server, and move the files to be uploaded to that directory.
2. Run the following command where `/tftpboot/` is the path to the directory you created in Step 1: the directory that contains the files to be uploaded. For example:

   ```
   in.tftpd -l -s /tftpboot/your_directory_name
   ```

B.1.2 In a Windows Environment

You can find several options online for setting up a Windows TFTP server. This example explains how to use the Solarwinds freeware TFTP server, which you can download from the following website address:

http://www.cyberdata.net/support/voip/solarwinds.html

To set up a TFTP server on Windows:

1. Install and start the software.
2. Select **File/Configure/Security** tab/**Transmit Only**.
3. Make a note of the default directory name, and then move the firmware files to be uploaded to that directory.

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Appendix C: Troubleshooting/Technical Support

C.1 Frequently Asked Questions (FAQ)

A list of frequently asked questions (FAQs) are available on the VoIP Indoor Intercom product page at:

http://www.cyberdata.net/products/voip/digitalanalog/singlewireindoorintercom/faqs.html

Select the support page for your product to see a list of frequently asked questions for the CyberData product:

C.2 Documentation

The documentation for this product is released in an English language version only. You can download PDF copies of CyberData product documentation from the VoIP Indoor Intercom product page at:

http://www.cyberdata.net/products/voip/digitalanalog/singlewireindoorintercom/docs.html

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C.3 Contact Information

Contact

CyberData Corporation
3 Justin Court
Monterey, CA 93940 USA
www.CyberData.net
Phone: 800-CYBERDATA (800-292-3732)
Fax: 831-373-4193

Sales

Sales 831-373-2601 Extension 334

Technical Support

The fastest way to get technical support for your VoIP product is to submit a VoIP Technical Support form at the following website:

http://www.cyberdata.net/support/contactsupportvoip.php

The Support Form initiates a ticket which CyberData uses for tracking customer requests. Most importantly, the Support Form tells us which PBX system and software version that you are using, the make and model of the switch, and other important information. This information is essential for troubleshooting. Please also include as much detail as possible in the **Comments** section of the Support Form.

Phone: (831) 373-2601, Ext. 333
Email: support@cyberdata.net

Returned Materials Authorization

To return the product, contact the Returned Materials Authorization (RMA) department:

Phone: 831-373-2601, Extension 136
Email: RMA@CyberData.net

When returning a product to CyberData, an approved CyberData RMA number must be printed on the outside of the original shipping package. Also, RMA numbers require an active VoIP Technical Support ticket number. A product will not be accepted for return without an approved RMA number. Send the product, in its original package, to the following address:

CyberData Corporation
3 Justin Court
Monterey, CA 93940
Attention: RMA "your RMA number"

RMA Status Form

If you need to inquire about the repair status of your product(s), please use the CyberData RMA Status form at the following web address:

http://www.cyberdata.net/support/rmastatus.html

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C.4 Warranty

CyberData warrants its product against defects in material or workmanship for a period of two years from the date of purchase. Should the product fail Within Warranty, CyberData will repair or replace the product free of charge. This warranty includes all parts and labor.

Should the product fail Out of the Warranty period, a flat rate repair charge of one half of the purchase price of the product will be assessed. Repairs that are Within Warranty period but are damaged by improper installation, modification, or abuse are deemed Out of Warranty and will be charged at the Out of Warranty rate. A device is deemed Out of Warranty when its purchase date is longer than two years or when the device has been damaged due to human error during installation, modification, or abuse. A replacement unit will be offered at full cost if the device cannot be repaired.

End of Life Devices out of warranty are included under this policy. However, End of Life devices are not eligible for our Spare in the Air program. End of Life devices are devices that are no longer produced or sold. Therefore, we cannot offer a Spare in the Air replacement. Technical support is still available for these devices. However, no firmware revisions or updates will be scheduled. If an End of Life device cannot be repaired, a replacement of a current version of the device may be offered at MSRP.

Products shipped to CyberData, both within and out of warranty, are shipped at the expense of the customer. CyberData will pay return shipping charges for repaired products.

CyberData shall not under any circumstances be liable to any person for any special, incidental, indirect or consequential damages, including without limitation, damages resulting from use or malfunction of the products, loss of profits or revenues or costs of replacement goods, even if CyberData is informed in advance of the possibility of such damages.

C.4.1 Warranty & RMA Returns within the United States

If service is required, you must contact CyberData Technical Support prior to returning any products to CyberData. Our Technical Support staff will determine if your product should be returned to us for further inspection. If Technical Support determines that your product needs to be returned to CyberData, an RMA number will be issued to you at this point.

Your issued RMA number must be printed on the outside of the shipping box. No product will be accepted for return without an approved RMA number. The product in its original package should be sent to the following address:

CyberData Corporation

3 Justin Court.

Monterey, CA 93940

Attn: RMA "xxxxxx"

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C.4.2 Warranty & RMA Returns outside of the United States

If you purchased your equipment through an authorized international distributor or reseller, please contact them directly for product repairs.

C.4.3 Spare in the Air Policy

CyberData now offers a *Spare in the Air* no wait policy for warranty returns within the United States and Canada. More information about the *Spare in the Air* policy is available at the following web address:

http://www.cyberdata.net/support/warranty/spareintheair.html

C.4.4 Return and Restocking Policy

For our authorized distributors and resellers, please refer to your CyberData Service Agreement for information on our return guidelines and procedures.

For End Users, please contact the company that you purchased your equipment from for their return policy.

C.4.5 Warranty and RMA Returns Page

The most recent warranty and RMA information is available at the CyberData Warranty and RMA Returns Page at the following web address:

http://www.cyberdata.net/support/warranty/index.html

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